THE CULTIVATOR.

THIRD] TO IMPROVE THE SOIL AND THE MIND. [SERIES.

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The Cultivator & Country Gentleman.

CATTLE-FEEDING AT THE EAST.

The attention given in the West to the fattening of cattle, together with the increased facilities for bringing them to market, might appear likely to produce a ruinous competition for the grazing farmer at the East. The extent of the western traffic has come to be immense. Mr. CORBETT of Chicago in an article prepared for the Department of Agriculture, gives the following figures of the receipts, shipments, &c., at that place, for four years:

	Total Cattle received.	Shipped East.	No. packed.	City consumption.
1859, ...	111,694	37,584	51,506	22,504
1860, ...	177,101	97,474	34,623	42,074
1861, ...	204,579	124,146	53,754	26,679
1862, ...	209,655	112,745	59,687	37,223

In 1861, however, 8,563 head were shipped east by the Joliet cut-off—going around instead of through the city—so that the total shipments for that year should be 132,709 head. In 1862, 41,592 head were shipped in the same way, and 40,230 head by the Great Western road from Central Illinois, connecting with the Wabash Valley road at State Line, which would make the total for that year, 194,567 head. If these figures are correct, the shipments of Western cattle included in the above table were *multiplied more than five-fold* in the short period of four years!

In the last annual volume (1863) of the Agriculture of Massachusetts, we find a report from the careful pen of Mr. PHINEAS STEDMAN on the production of meat by the farmers of that State, as a source of profit. After alluding to the widely different opinions expressed by different persons on the subject, Mr. S. goes on to show that "it is both profitable and expedient," if not on a large scale and as a primary object, at least as a secondary one, and in connection with other branches. In connection with dairying, the production of pork or raising of veal calves, proves very remunerative; and "the production of mutton in Massachusetts is largely on the increase from year to year, and, as we have reason to believe, with satisfactory results." As to beef cattle, Mr. S. says of *stall feeding*: "If to the value of the beef, the market value of the manure be added, it is still doubtful whether the sum total would yield a full remuneration to the feeder. Yet with the exercise of good judgment in selection and purchase, and with skill and economy in feeding, together with due care in the preservation and application of manure, we arrive at the conclusion that this branch of meat producing is profitable." The three points here alluded to, furnish exactly the secret of success; those who fail may fairly conclude that in one of these they have gone somewhere amiss; for, as Mr. S. proceeds to say, a neglect to bring them into requisition, "serves to reverse the whole operation, and render it unprofitable, if not disastrous." With this caution, however, he still asserts that "those farmers who have been most persistent in this course of feeding, will at least compare favorably with others pecuniarily, while their farms at present are in a higher state of cultivation than those of their neighbors, who have pursued a different and opposite policy."

As to *grass-feeding*, Mr. S. says that it is pursued to a considerable extent in all the five western counties of the State, and with a good profit: "we feel it safe to say that an average advance of thirty-three per cent upon the purchase may be relied upon in return for six months' pasturing, or from ten to fifteen dollars per head. Where suitable stock can readily be procured, we believe that no better use can be made of a large proportion of our good pasturage."

In the production of beef by either of the above methods, it is taken for granted that the animal is purchased for the purpose—not bred by the feeder. As to *breeding*, as well as feeding, taking into account all the drawbacks encountered and expenses incurred, Mr. S. still leans to the opinion that the experiment may be satisfactorily tried. His estimates show but a very narrow margin for profit; and yet, "upon careful consideration of the benefits of spending the produce upon the farm, and the increased advantage in this respect of the production of meat over that of milk, butter, or cheese, to be at once conveyed to the market, it may be well questioned whether the former is not really more remunerative and should not receive increased attention." But much emphasis is properly placed upon the breeding of such animals as will be most likely to pay for beef, when they prove lacking in milking capacity for the dairy; upon liberal

feeding, and upon the advantage to be derived by the gradual improvement, by judicious breeding, both of the dairy cows of the State, and of the working oxen by which its farm labor is so largely performed.

Mr. Stedman, and the committee of the Board for whom he reports, assert in conclusion that it is to this source more than any other, that the farmers of Massachusetts must "look for the recuperation and renovation of our somewhat exhausted and sterile soil." Their report is both practical and instructive, and can hardly fail to contribute to the desired end.

AGRICULTURAL EDUCATION.

What *is* Agricultural Education, and is it, or isit not, desirable?

We are led to ask the question, owing to the confusion of ideas which seems to prevail, and which is manifested so frequently in what is said and written on this much mooted question. For instance, an article in the Philadelphia "Rural Advertiser" for July, intended, as we presume from its general tenor, to advocate agricultural education, remarks:

"Instead of introducing the student of agriculture to a laboratory and chemical and philosophical apparatus, we would introduce him to a pair of heavy neat's leather boots and corduroy pants, and learn [teach] him how to load manure and drive oxen. We would put him through a course of really practical farming, and we would select as profeseors such men as the Cornells of Bucks county, and the Conards of Chester county, who could not perhaps make correct and critical analyses of soils, but who could raise good crops of corn and potatoes, and wheat and barley."

The idea on which the advocates of agricultural education have based its claims, has been that a farmer will be more likely to carry on his business advantageously to himself and for the country, the better the education he has had, particularly in those sciences which have a more immediate connection with the soil and its cultivation. The general correctness of this idea we shall not pause to discuss. If taken for granted, we have some definite object in view, in the establishment of agricultural schools and colleges. A man is *educated*, not by practice in loading manure and driving oxen, however important elements these may be in farm labor, but by acquiring knowledge and by so cultivating and enlarging his mental faculties as to be able to put them to better use, not only in the application of the knowledge actually acquired, but also in solving the problems he is to meet with in future effort. And he is educated *agriculturally*, if we understand the use of language, when the branches of knowledge to which his attention is directed, have a bearing upon this art; when that bearing is pointed out to him by competent teachers in the most practical way, illustrated if possible, or as may be possible, in actual observation, or by facts drawn from experience, and when, lastly, he learns as much as study and observation can impart of the past history and present development of all the branches into which the art may be subdivided. It is an education of this kind, to the lack of which on the part of the present generation of farmers, so many are ready to ascribe the fact that the average return of their labors is not so good as it might be made. And it is this sort of education which the student in law or medicine receives; his actual *practice* comes afterward.

This is what agricultural education *means*, if it mean anything at all. It can have no other signification, unless, as would be implied in such remarks as the foregoing extract, it is considered synonymous with *an apprenticeship at a trade*. In that case we need no agricultural schools. Such farms as those of the "Cornells" and the "Conards" in Pennsylvania,—nay, the best farmers in every county through the Union, are more likely to afford examples of really money-making, thorough-going, careful management, than can be expected on any number of acres under the less watchful eyes and less directly interested control of Trustees or head-managers. There is no need for the pupil to go far to pursue his "studies;" he can probably do so, at so much per month "and found," at home, instead of running up term bills and travelling expenses.

And it is very much in this way that our farmers *have been* "educated" from time immemorial. The question now before us is, whether we can improve on the old plan or not? It certainly will be far from an improvement merely to do the same thing, less thoroughly, less systematically, with less prospect of success, for the sake of doing it in a so-called "college," instead of nearer home.

Now, as we said above, the great question as to whether, and in what degree, education *is* a benefit, either to the farmer or the mechanic, is too broad to be discussed here. We have received a gift from Congress under the supposition, however, that such is the case; all our institutions, in fact, are based on the presumption that the more widely the benefits of education are diffused, and the higher the grade of that education—the greater the probable prosperity and happiness of the whole community. An education is not a business. It consists in study and discipline. And the question for the farmer to-day is whether a course of such study and discipline can be devised, with a direct view to his wants, which shall be worth to him more than the time he will lose in practice at driving oxen and loading manure,—which shall enlarge his mental capital more than it diminishes his opportunities of gaining manual experience?

The act of Congress says the "income of the fund is to be applied to the endowment, support and maintenance of at least one college, where the leading object shall be, without excluding other scientific and classical studies, and including military tactics, *to teach such branches of learning* as are related to agriculture and the mechanic arts, in such manner as the legislatures of the States may respectively prescribe, in order to promote the liberal and practical education of the industrial classes in the several pursuits and professions of life."

We drop the subject for the present, with the single remark, that the object of the proposed colleges as above defined, is comprised in the words we have *italicized*—viz.: "to teach *such branches of learning*," &c., as shall tend to "promote the liberal and practical *education*" of those who practice "the several pursuits and professions of life"—a very wide programme, it is true, but *not* including the "teaching" of "shoemaking, the blacksmith business, carpet-weaving," *nor any other of these pursuits themselves.*

Mr. Ott's Agency.—Attention is called to the Advertisements of Mr. Siberia Ott, 748 Broadway, New-York, to whom we can confidently recommend our readers to apply for anything in the line of his business, as dealer or general agent.

THE GOLDEN AGE OF FRUIT-CULTURE.

Among the older inhabitants there are not a few who consider that the good days of fruit-raising have departed. They remember when apple-trees bent under great loads of fair fruit without a wormy or knotty specimen; when the curculio was unknown, and plum trees were annually loaded; when even the apricot, which can now scarcily be raised, came down in golden showers from the trees with but little trouble in their management; and when the peach-crop was so profuse that, in addition to filling all the neighbors' baskets, the remainder of the crop had to be fed to the hogs.

Now it must be admitted there is some truth in this, with some error. We have at least a few fine things now that we did not enjoy many years ago. The more general introduction for example of the Bartlett, Seckel, Flemish Beauty, Louise Bonne, and Angouleme pears; a finer succession of cherries; strawberries that will yield as many bushels to the acre as potatoes, &c., are certainly an advancement on the past age.

But what is the reason of the deterioration already alluded to? Some ascribe it to the fact that insects and other depredators have found out our orchards, and are after the fruit in the same way that the rat keeps up with the march of civilization, even to the remotest ends of the earth; so the curculio, apple-worm, borer, aphis, caterpiller, canker-worm and their compeers now penetrate to every region where trees are planted, although early settlers got the start of them for a few years. Others think that the good old varieties have "run out," or that the original fertility of the soil has departed, or that the seasons have become colder and that the crops and trees are winter-killed.

Most of these reasons have truth in them, and in order to restore the golden age we must meet these difficulties and conquer them. With regard to insects enough has been already said, so far as practical directions are concerned, for getting rid of them. But something more must be accomplished to induce cultivators to apply the remedies. The farmer will expend hundreds of dollars in fencing out intruders from his corn and wheat; but he thinks it a hardship to devote half an hour each morning to crushing the curculios or clipping incipient caterpillars' nests from the shoots. The great point is to bring the mind to the adoption of the truth that fruit, as well as other crops, is to be preserved by labor.

We may as well add, in this connection, that much may be done, by way of restoring the former smoothness of specimens, if the proper thinning on the tree, at the right time, is adopted. Yonder, for instance, is an apple-orchard at mid-summer—most of the trees have twice as many specimens growing upon them as they can develop at full size and mature with perfect flavor. It will be found also that one-half or two-thirds of them are wormy or knotty. All that the owner has to do, therefore, is to bring out his ladders and thin out all that are bad or defective. He will do this many times more rapidly than gathering the fruit, because he has to take no pains with them. His crop will then be left in an excellent and fair condition, and be far more saleable in market than if disfigured by an inter-mixture of scrubs. These remarks will also apply to pears, with the addition that they are more likely to be stung and rendered knotty by the curculio than the apple.

Secondly, as to the running out of old sorts. A few have become more liable to disease, but, as many more have been added in their place, the difficulty has been already fully met.

Third, deterioration of the soil. This has really been the case in many instances. The original vegetable mould diffused among the particles of earth, giving it looseness and friability, and rendering it eminently fitted for fruit-growing, has been gradually worked out by cultivation; and another bad effect has been the result, namely, the setting of the soil to a more compact texture, and, where clay predominates, causing an increase of wetness in spring and drouth at mid-summer. The remedy for this difficulty is the addition of composts which consist largely of peat or vegetable mould, or of common manure containing much decayed straw. This addition will tend to loosen the soil and to restore its original richness. Where there is a natural drainage by gravel or rock beneath, or on hill-sides where there are no springs, this manuring, connected with good, mellow cultivation, will render the soil all that is desired. In other instances, thorough under-draining will be all that is essential, the tile being laid equidistant between the rows of trees. We are not aware that the small roots of common fruit trees have ever filled and choked the tile of drains, so often occurring with roots of the willow and different forest trees. There are portions of the country where the soils are naturally heavy, where close observation has shown that the surface has actually settled some two or three inches. The earth has consequently become more compact, adhesive, and unfitted for fruit trees. In all such instances it can be restored only by under-draining, thorough cultivation, and the addition of the manures already mentioned.

Fourthly, increased coldness of the seasons. The thermometer shows that this opinion is erroneous, so far as mere temperature is concerned; but the clearing away of forests has exposed the surface of the country to a stronger sweep of the winds. This difficulty must be obviated by planting belts of trees; evergreens are most efficient, a single row or two being equal to a belt two or three rods wide of deciduous trees, and having small roots they draw less on the strength of the adjacent land. However, as timber is becoming scarce and valuable, it will often be found desirable to restore it by occasional belts of timber. The objection sometimes made by orchardists to the shelter of trees, probably arises from the fruit trees being planted too near them or in their shade. The well-known fact that the windward side of orchards is found more destitute of fruit than other portions, shows conclusively the importance of protection from winds.

In order to restore, therefore, the good old times when fruit was obtained so cheap and so excellent, we must remember that while it need not cost a great deal, yet that its price is eternal vigilance, connected with judicious management. It will not take care of of itself—and the sooner this almost universal error can be eradicated the better it will be for both parties—namely, the trees and their owners. Let the requisites be well attended to, and make a proper selection of the best hardy sorts adapted to give a succession the year through, and we need not fear a good supply of all that is desired, and the golden age will be restored with compound interest.

Compound and Complex Instruments.

We have often had occasion to recommend simplicity of structure in farm implements and machines, (other things being equal,) as most likely to promise long-continued success. A complex machine for accomplishing heavy work, cannot be kept in order without great trouble and much expense. A crow-bar is a very simple affair, is always in order, and possesses universal utility. The plow, although made of several parts, is simple in its working. The same remark applies to the common harrow. Even the mowing machine operates by very few movements, and the resistance to be overcome is not great.

For the reasons above stated, most of the machines which have been recommended for accomplishing several different purposes have proved failures. There are however some, which, by a little modification or by the removal of certain parts, may be varied for different purposes. For example, some farmers have used the common wheat-drill for planting beans—a crop which succeeds best when drilled. The machine is adapted to this purpose by simply removing all the tubes but the central and two outside ones. By some modification the same arrangement could be employed for planting corn thinly in drills for common crops, and more thickly for corn fodder. Again, the best one-horse cultivators, such as have large plow-like teeth, have been successfully used on fine, mellow ground for covering the rows of potatoes, by simply removing a tooth over the row, and setting the others so as to throw the earth upon it. The ingenious farmer will devise many other slight changes in his implements for effecting different purposes.

But there is one point to which the attention of farmers and manufacturers must be directed more than it has hitherto been, now that farm labor has become so scarce and expensive. This is the employment of two or three horses for the performance of such work as one has been formerly used to accomplish, or three horses instead of two. To use a single horse for plowing or cultivating corn and potatoes, requiring the whole time of one man in attendance, and in some cases a passing of two or three times for a single row, is too slow a process for present emergencies. Cultivators should be constructed, to be drawn by at least two horses, and to take at least three rows at a time—the teeth being long enough to allow the implement to pass over the tops of the plants until they have attained considerable height. Good managers have found that cultivating their corn, from the moment it is up until the rows are too close to admit the passage of horses, adds greatly to the amount of the crop as well as to the good condition of the land. But farmers will not do this work so long as they are compelled to use the slow, retail process of a single horse. The general introduction of a three-row cultivator would, doubtless, be the means of increasing the corn crop throughout the United States, millions of bushels yearly.

It will be admitted that for this purpose the corn must be planted in straight rows, perhaps by means of planting machines, and that stumps, large stones, and other obstructions, would necessarily have to be removed from the surface. This, however, would be an advantage, and the improved machines be the means of effecting the improvement of rough fields into smooth ones.

For plowing and harrowing, three horses, as a general rule, is the smallest team that should ever be used. for many purposes three horses abreast will do about as much work as four, two of them being employed as leaders. With the three horses placed near the plow, the draught is effected to the very best advantage; with the four, two are quite distant, and work to much disadvantage—the line of draught also tending to draw the rear horses downward. The four horses cannot be well driven without an assistant, the three require none. Such plows should therefore be selected as will furnish employment for three horses instead of two, and thus not only plow deeper and better, but more rapidly. A great deficiency exists in relation to good harrows. They are mostly too small, and with too few teeth. Broad harrows, with a sufficient number of parts hung together by joints to fit the surface of the earth, might be made to accomplish work twice as rapidly as at present, by means of three horses attached to them. Smaller teeth and double or triple the number would effect more complete pulverization. Such implements, of course, pre-suppose the removal of stumps and fixed stones, and smooth fields, as already mentioned. Where such obstructions are numerous, poorer implements, with the use of one or two horses, must be resorted to.

FATTENING SWINE.

Farmers begin to fatten swine too late. Some do not commence till the first of autumn, and others even later; the consequence is the animal scarcely gets under way when the time comes for slaughtering him. Our best managers make it a rule to keep the animal growing without intermission from the first period of its existence until ready for the pork-tub. If kept over winter, they are fed and kept comfortable throughout, and the regular fattening process is commenced early in spring. A bushel of corn given thus early in the season to a vigorous growing animal, is worth much more than the same amount fed in autumn, and far more than if fed in cold weather or in winter. One reason that some farmers find it unprofitable to fatten pork, is that a large part of the process has to be performed when the weather has become so cold that much of the feed is required merely for sustaining animal warmth.

The best pork-raiser we know of, has in one instance grown a pig eight months old so as to weigh about four hundred pounds; and, in another, four hundred and fifty pounds, in ten months. He has the corn ground to meal, and prepares it by pouring into a covered tub four pails of boiling water to each heaping pail of dry meal. After standing a day or more, it all becomes nearly a solid mass, and makes excellent feed. The animals are kept perfectly clean, dry, and comfortable, (not in a close pen, but in a small yard,) are fed with great regularity, and never quite so much as they will eat, surfeit being carefully avoided. He finds that pork thus manufactured costs him only five cents a pound when corn is a dollar per bushel.

Farmers who have not begun to fatten their swine regularly, as they should have done months ago, should commence immediately. By attending to the

particulars just mentioned, they will find the business far more profitable than the too frequent practice of feeding in the ear, giving the feed irregularly both as to time and quantity, and paying no attention to cleanliness and comfort. The skillful farmer, whose practice we have already described, finds that the mixture of meal and hot water makes twice as much pork as corn fed on the cob, according to careful weighing and measuring.

COMSTOCK'S ROTARY SPADER.

The numerous efforts that have been made within the last few years, both in this country and in England, to introduce some efficient labor-saving machine, as a substitute for the ordinary plow, have not, until a late period, been marked with the most encouraging success. The chief cause of the failure of some of these experiments, may be attributed to the fact that the efforts have been mainly directed to plans utterly impracticable. I have before taken occasion to say that a full measure of success can only be looked for in a machine that is operated on the rotary principle. It is a matter of encouragement to the farmers to know that the recent invention of the Hon. C. Comstock of Milwaukee, Wis., gives promise of the most satisfactory results in this direction. This machine, I believe, was first put in operation last season, and the accounts we have received of it since the opening of the present season are of the most gratifying character. The most complete account we have of the operation of this machine, is given by M. L. SULLIVANT, Esq., of Illinois, in answer to a letter addressed to him by the editor of the *Rural New-Yorker*, extracts from which were published in the COUNTRY GENTLEMAN of June 9th. Mr. Sullivant has had four of these machines in very successful operation on his farm the present season. Mr. S. is not only a very large farmer, but a very intelligent and successful one. His farm embraces an area of 20,000 acres, and he probably has more land under cultivation than any other farmer in the United States or perhaps in the world, and to all new farm machinery that gives promise of labor-saving he is disposed to give a fair trial. The opinion of such a man may be regarded with more than ordinary consideration.

I will not here attempt to give a description of the machine, but will merely state that the main or rotating shaft is furnished with a certain number of teeth or narrow spades, which are operated in a peculiar manner, by the action of cams connected with the heads of the machine. By the action thus produced, the teeth are made to enter the ground with the least possible amount of friction or resistance, thoroughly pulverizing the surface to the depth of eight inches, and carrying a width of three feet, and thus breaking up a dozen or more acres in a day. The machine weighs but 900 pounds, and is run at present only by animal power, requiring four horses, which are harnessed abreast. These work the machine with more ease than two horses can draw the common plow, cutting a furrow at much less depth. Mr. Sullivant sometimes attaches two of these machines together, and runs them with six yoke of oxen, taking a width of six feet.

In April last Mr. S. gave an invitation to Mr. H. D. Emery, editor of the Prairie Farmer, to visit him, and witness the operation of the machines, an account of which is given in the Farmer for May 21st. As the machines leave the ground in perfect condition for immediate planting, Mr. S. designs to attach self-dropping planters to them, so that the spading and planting can be accomplished at one operation. With this combination Mr. Emery gives the cost of growing an acre of corn, as estimated in the office of Mr. Sullivant, compared with the lowest price of the ordinary method of plowing and cultivating corn in the west. The cost of labor and teams is estimated, as it should be, at peace, and not at the present war rates, as follows:

Cost of an Acre of Corn Cultivated in the ordinary way.

One man and 2 horses will plow 2 acres, cost per acre,		$1.00
do.	4 oxen will harrow 20 acres, cost per acre,	15
do.	a boy and 2 horses will plant 10 acres, cost per acre,	25
do.	two horses will cultivate eight acres twice, cost per acre,	50
Total cost per acre,		$1.90

"One man with spaders and eight horses, traveling the same distance (16¼ miles, spades 3 feet 8 inches in width) will prepare and plant 14½ acres, and we have a cost of 34½ cents per acre. Add cultivating, 50 cents per acre, as before, and we have the cost of laying by a crop of corn, 84½ cents per acre, or a saving of $1.05½ cents per acre over the common way."

From this data it appears that the cost of growing an acre of corn is reduced more than one-half, and it may be safely estimated that the crop per acre will be increased at least 25 per cent. in consequence of the more thorough preparation of the soil by the spaders.

These facts and estimates are of the most encouraging character when we remember that the invention is in its infancy. So far as I have any knowledge these are among the first practical operations of the machine, and yet they seem to give great satisfaction. It required years to perfect the mowing machine, even after it had been regarded a success, and so with most other machines. For this very good beginning great improvements may be anticipated. There is no doubt that in the operation of this machine the inventor will discover many points in which he can improve it, and other inventors who will be enabled to bring entire new ideas to bear upon it, will be able to strike off on new and improved plans, only retaining the rotary principle, and in less than half the time that it has taken to bring the mowing and reaping machines to their present state of perfection may we look for spading machines propelled by steam power that will astonish the world.

This spader now accomplishes much with horse power. What is now wanted is to increase its size and capacity, and adapt it to steam power, so that instead of preparing 14 acres per day, twice that amount may as easily be done, and in a deeper and more thorough manner, if necessary,—thus dispensing with animal power for plowing, and thereby rendering steam power more economical and more general upon the large farms of the country. As I have before intimated, in order to render steam power most economical for farm purposes, it must be made to perform all the labor to which such power is applicable, and the plowing upon the farm will constitute the greatest amount of such labor. A steam engine is more liable to injury from standing idle than from being constantly in use, under good management. The English farmers find it economical to employ steam even when it is not used for plowing, but let it perform all the plowing upon the farm, and steam will become the most efficient and economical agent that can be employed.

In these times, when a million of men have been called from the farms to other fields of duty, the farmers may rejoice at the introduction of so valuable a labor-saving machine as the new spader promises to be.

H. P. B.

A Day with John Johnston---Crop Prospects.

The early part of the present season, with its continuous rains, interfering with the preparation of the land and getting in of the seed, was such as to illustrate very pointedly the advantages of Thorough Drainage, where land not drained was flooded with surplus water. The subsequent drouth has been such as to afford a test of the results of drainage in dry weather. In passing a day last week, with our old correspondent, JOHN JOHNSTON, near Geneva, he mentioned as one of the arguments used by his neighbors at the time (about twenty-five years ago,) when he was first getting his "crockery" under ground, that "it might be well enough to carry off the surface water if the tile could be put say a few inches deep, but what *must* be the consequence, in a dry time, of having run off all the moisture of the earth down to a depth of two or three feet!"

In a field of eighteen acres of Soule's wheat this year, the lines of drain beneath were very distinctly shown in the character of the grain above, and in a way quite different from what has heretofore been the case. When the field has been in wheat in ordinary seasons, the growth immediately over the tile was inclined to be too rank, and consequently the period of ripeness later than the rest, and if the midge was anywhere about, it has been likely to get into these parts of the field, while the rest would escape. This year, on the contrary, the grain over the drains advanced the most rapidly, ripened the soonest, and was much more free from the ravages of the insect. This is probably owing to the fact that its roots penetrated more deeply; it consequently suffered less from the winter, and was just in the best order for a good growth in the summer. Instead of suffering any lack of moisture, it actually grew as though it had had the better supply. It may seem late in the day to mention instances of good results from thorough drainage, but too many can scarcely be placed on record. Over these drains, when the field is in grass, the stock will first pasture the herbage down; it is sweeter and more to their taste, and they select it accordingly.

During the quarter of a century since Mr. JOHNSTON began the drainage of his farm, it is worth noting that he has never had to take up a drain in any instance, from its giving out. He has had to replace old mains by new ones of larger size, where an extension of the laterals required it; but on the question of the durability of tile draining, his experience goes to show that if well laid there is no reason why it should not be as effective after the lapse of a century, as at first. In mains replaced as above, the tile after lying for years in the ground, has been taken out as sound and solid as when put in. Thoroughly to drain *clay land*, he has no doubt that lines of tile would pay for themselves if put in at considerably shorter distances from one another, than on his farm; and his drains are only 25 to 33 feet apart. On lighter, loamy land, increased depth and greater intervals are likely to answer, but not on heavy clay—an opinion co-inciding with that expressed in a recent article of Mr. Mechi's on the subject. The days are happily gone by, when the farmers about, if returning in merry plight from some village gathering, would give a passing hoot of mockery at the tile along "Scotch" Johnston's farm; and there are now twelve or fifteen tileries within less than as many miles of where he lives

Mr. JOHNSTON believes in fallows. He always fallowed for wheat, until on renting his farm some years ago he would allow the tenant to sow after other crops, but he now returns to the old practice as preferable and really more profitable. We went out to a fallow of about 13 acres, broken up because the twitch or couch grass had begdn to come in; and the thorough preparation it was undergoing is like nothing we have seen since the similar labors on English farms. It was plowed early in the season, and cross-plowed, and harrowed twice, in July. Now the roller was going over it, and though already in as good order as most fields are sown, Mr. JOHNSTON has planned to *cultivate* it, using this instrument to draw out what twitch roots remain, to plow again, harrow, re-cultivate, and if necessary to harrow again before the seed is drilled in. This will completely rid it of the twitch, which will be raked up and burned, and the crop of wheat that follows ought to be a good one indeed. The truth is, said he, "our farmers don't *half work their land*;" and this field was already so mellow that while a few lumps lay over the surface hard and dry—close to the very top on most of it, the soil was shown to be as moist as ever, notwithstanding a fortnight's lack of rain.

For Indian corn particularly, careful working of the land is well repaid. When Mr. JOHNSTON first took the farm, he raised but little corn under the impression derived from his neighbors, that the land was unsuited for it—and he put that in much in the common way, mindless how rough the field might be. He soon found his mistake, however, and that by well working the land, and having it pulverized and mellow, he could raise this crop as well as any other. This year the heavy rain just after planting washed much of the seed out of the ground; there was no weather to re-plant, and the crop is consequently below an average.

Mr. JOHNSTON has now only about a hundred acres under his charge. He fed last winter 300 sheep, and several head of cattle, buying nothing for them except the oil-meal they consumed. It is this attention to the means of making manure, as he has often said, that has *made his farm*. Sometimes it has paid better to feed sheep, and at others cattle have brought in the largest returns. In answer to an inquiry at what season it has proved best to sell the cattle he fed, he replied, "Just as soon as they brought a profit." He would then buy another lot of half-fed animals to finish off, and has often been able to make a handsome thing on those which seemed to be thriving poorly under the less vigilant care of previous owners.

But we cannot linger in conversation with our veteran friend, who is indeed never more happy than in imparting information to others, and whom the hand of Time has touched but gently, as it has brought him into the harvest-period of so long and vigorous a life. With the same enthusiasm as of old, he plans for the crops of the recurring seasons; and long may he still be spared to see them sown and garnered, and to know that the good seed of his example and advice is also bearing fruit on many another farm in this and distant States, where his own hand has never held the plow nor gathered in the sheaves. Strangers who write

to him with questions, nevertheless, should exercise a little mercy, remembering what Mr. Mechi styles "the miseries of a public benefactor." Mr. JOHNSTON has always shown a generous willingness to reply to the inquiries he receives, but we should consider it little better than an imposition, even upon editorial good-nature, to be annoyed with page after page of general interrogatories, which could only be fully answered by a regular treatise on agriculture, or by requests for advice when, very often, the careful reading of what Mr. JOHNSTON has already written, would exactly suit the case.

Three miles above, along the pleasant road that skirts the lake, is the well-cultivated farm of H. T. E. FOSTER, Esq., and there are few, there or elsewhere in the State, that afford better evidence, in the condition and character of the stock, in the tidiness of the fields, and the testimony of the stubbles where the crops are already harvested—to thorough-going and successful management. Mr. FOSTER has a fine young Short-Horn bull purchased from Mr. Sheldon's herd, and raises high grades of this breed, not as a matter of fancy, but for the profit afforded in feeding. He has a heavy crop to look after annually for a farm of not much more than 200 acres;—this year there were 70 acres of hay to cut, 51 of wheat, 10 of barley, and 12 of oats, while 10 of Indian corn are coming on for husking time. The land is all in order, from manuring and cultivation, to yield admirable crops; Mr. F. has had an average of 40 bushels of wheat to the acre, and has no doubt that this year's crop would have reached the same figure, but for the midge, which has taken perhaps half of it for its unwelcome share. Just now, between the drouth and the abounding plague of grasshoppers, the grass and stubbles are rather bare; and the welcome showers of Saturday afternoon, meeting from northwest and southwest on the lake, just below, parted company as soon, leaving Mr. Foster, on the right and on the left, with but a sprinkle of it all to freshen the atmosphere.

Mr. FOSTER'S rotation, while agreeing in many respects with that frequently practiced in the vicinity, is not very commonly carried out in this country on his plan of making it include *all the grass land* of the farm. The land lies in grass, clover and timothy, two years, and is then turned over, no matter how good the standing growth may be, and though it seems sometimes a pity to lose the herbage when so luxuriant and valuable in itself, still it is remembered how great its value also is as a fertilizer of the field. In this way, and by the liberal manufacture of manure in winter feeding, the farm has been brought into very high productiveness, and in the establishment of a system so long and steadily adhered to, it is a model for general imitation. The rotation is Indian corn on sod land, followed by barley, wheat and clover. But as all the grass land turned over is not required for Indian corn a part is put into oats, with manure, and the rotation proceeds as before. For a large part of the wheat, however, it should be added that a fallow is allowed—there are 30 acres in fallow this year, and while the crop immediately after barley has sometimes been as good as after a fallow, still the latter is considered on the whole the most satisfactory rule to follow.

A farther drive of several miles brought us to "Eagle Tree Farm," the charmingly situated residence of A. B. PALMER, Esq., which has good reason for its name, in being, as we noticed, a favorite haunt of the royal bird. In the absence of the proprietor himself, the agriculture of the conversation turned mainly on the denizens of the poultry-yard, to whom, in the present narrowness of our limits, we must quietly give the go-by.

Although going and returning (as far as Rochester) mainly by night, we had daylight enough to show the wonderful effects of the rain of a fortnight since. The cornfields near Rochester had made surprising growth since we saw them three weeks before. And we returned with renewed encouragement as to the probable yield of the State the present season. B. M. BAKER, Esq. of Rochester, whose opportunities of observation have been unusually wide, and in whose opinion we are inclined to repose the highest confidence, assured us that Monroe county had harvested a crop of wheat quite "like old times;" he would estimate the average for the county at 18 to 20 bushels per acre, notwithstanding what the midge had done on low grounds, or lands late sown and badly managed. Of Livingston he thought nearly as well, and of most of Ontario. Early sown oats have turned out well—light in straw, but better in berry and larger heads than anticipated. Farmers are discouraged about potatoes, but Mr. B. thinks they are not going to yield so very badly after all. Hay was short, particularly on old meadows, but the deficiency is partially made up in superior quality. And as to Indian corn, our informant had been about the State quite extensively of late, and considered it safe to say that a greater breadth and larger yield of this important crop may be anticipated, than we have had in twenty years. Thus, returning with these notes in pocket, and in the track of recent showers along the whole road—and here and there very liberal ones too—we write with a brighter future in view, and renewed confidence in that beneficent Providence, which, amidst the sacrifice and suffering we have undergone to uphold our government and our nationality, has kindly granted us thus far the blessings of abundance for ourselves and a surplus for the demands of others.

CORRECTED RECIPES.

Several errors having occurred in two recipes published July 14, p. 31, A HOUSE-KEEPER sends us the corrected recipes, as follows:—

Sally Lunn.—Melt one quart of sweet milk, a quarter of a pound of butter—beat six eggs very light, and stir into the milk—also one teaspoonful of salt and a teacup of fresh yeast. Stir into the mixture as much flour as will make a thick batter, and set it to rise. Bake in pans as egg-bread, or in muffin rings. If you bake in pans, split open the cakes, and pour over liberally of melted butter. In summer this bread will rise in the kitchen in three or four hours—in colder weather it takes longer. If it should sour, stir in a little soda.

Waffles.—Melt a large spoonful of butter in a pint of sweet milk; beat three eggs well, and mix in the milk. Sift one quart of flour, rub in it one teaspoonful of salt, and two of cream of tartar, and stir it into the milk until a perfectly smooth batter is made. Dissolve one teaspoonful of soda in a tablespoonful of boiling water, and mix in just before baking. Have a clear fire and your irons clean and well greased. Serve with melted butter poured over.

A CURIOUS INSECT.

The following communication from HORACE EVERETT, Esq., Council Bluffs, Iowa, so clearly points out a very curious little insect of our country, that, before I had perused half of the account, I became aware of what it was that he was alluding to. He says:—

"For several years I have noticed a very singular insect infesting the stem of the bitter-sweet vine, and have never seen them on any other vegetation. I inclose several in quill for your inspection. Their shape is very much like a prairie-hen with its erect head and neck, and has a very graceful appearance. They leap a great distance, but their motion is so rapid I cannot discover whether they use their wings. On confining some of them in a glass tumber, they flew (leaped) against its sides with such velocity as to break their heads off entirely, and what was most remarkable, was that it did not seem to affect their vitality, they continning to walk about as before. Is it a new insect? I send them to you, thinking they would interest you."

This insect is the Two-marked Tree-hopper, *Enchenopa binotata*, as it was first named by Say, in the year 1824, in the Appendix to Long's Expedition, vol. ii., page 301. It is a small rusty brown or black tree-hopper, a quarter of an inch or a little over in length, with two pale yellow spots on the middle of its back, and the fore part of its back prolonged upward and forward into a horn, which is bluntly rounded at its tip, giving to the insect a marked resemblance to a little miniature bird with an outstretched neck. But this horn is not the real head and neck of the insect. Below it, at the anterior end of the body, immediately above the legs, a shining dot may be seen on each side, which dots are the insect's eyes, and with a magnifying glass the suture or crack separating the real head from the body, may be distinctly seen.

It is an interesting fact, brought to our knowledge by the above letter, that this insects leaps with such force that if it chances to strike against a hard substance it breaks off the end of its large, thick horn. It is thus very liable to excite astonishment that it so recklessly knocks off what is apparently its head, and with its brains dashed out, as it were, walks around as well as it did before.

Here in New-York, I have met with these insects oftener upon butternut trees than in any other situation. Upon a butternut tree in my yard, they have made their appearance annually in July, for a great many years, continuing until September. They also occur on different kinds of dog-wood. It nourishes itself by puncturing and sucking the juices of the tree and shrub on which it dwells. ASA FITCH.

East Greenwich, N. Y., July 14.

P. S.—D. B. WAITE, Springwater, Livingston Co., N. Y., also encloses these same insects to me, July 11th, saying they were last year noticed on some bitter-sweet growing by his dwelling, and within a few days they have reappeared on it in great plenty. The bitter sweet, therefore, is evidently a kind of vegetation to which they are greatly attached.

GRAPES FOR COLD VINERY.

At the Eastern Pennsylvania Fruit-Growers' Association the following were the only varieties that received more than a single vote: Black Hamburg, 8 votes; Bowood Muscat, 4 votes; White Frontignan, 2 votes; Grizzly Frontignan, 2 votes; Black Prince, 2 votes.

COOKING FISH AND OYSTERS.

Fish.—This article, always esteemed a luxury in or out of season, off the coasts and great rivers, is cooked in many ways, but we give but three or four leading ones. The fish should be fresh, well cleaned, out and inside, not soaked in water, and if to be kept at all, must be in ice entirely. The gills are red, eyes not sunken, and the whole body elastic, of a fresh fish.

Baked Fish.—Cut two or three slices of best bread, butter it, and powder with mace and pepper. Dip the bread quickly in some good wine, lay it in the fish and tie it securely. Put some wine and water into the bottom of the pan, and baste the fish with it freely until it bakes quite done. While baking, mix a quarter of a pound of butter with a heaping teaspoonful of flour, to a cream. Stir this into the gravy after you have taken the fish up, and use it for sauce. You may stuff a fish as you would a chicken, and use drawn-butter flavored with a pleasant catchup or egg sauce.

Boiled Fish.—Lay whatever fish you wish to boil on a strainer in the kettle. Let your kettle come to a boil slowly. When you think it done, see with a knife whether the spine is loose in the flesh. If done, lift up and drain perfectly. Lay the fish in a clean white napkin, fold it over, and send to the table immediately—or pour the sauce hot over the fish, and cover it.

Broiled Fish.—Cut into nice slices, and over a clear fire of coals put it on a gridiron until well done, turning it over carefully. Keep a dish with melted butter in it, seasoned with pepper and catchup, and lay the pieces in it; when done, turn them over and cover closely.

Fried Fish.—Lay small fish or pieces of large fish into a pan with sweet hot lard or butter. Fry brown on both sides. There should be enough grease to cover the fish well, or it will stick and burn. This is a gross dish, and requires some good sauce to molify its strong taste, especially if fried in lard. Some persons dip small fish in corn-meal before frying.

Oysters—Have become so common, even in our far western homes, that it falls to the lot of most housewives to cook them. The printed directions on the cans often mislead. It is very rare that you can use much of the liquor of pickled oysters; it is too salt. Almost uniformly they should be washed, and if very salt, soaked. After that they may be used as fresh canned oysters, and neither kind may be expected the earnest compliment of a guest from oyster regions, of tasting "quite like those just from the shell."

Stewed Oysters.—Put sufficient water with the liquor from fresh oysters to cover them in a dish. Drain the liquor into a kettle, and when it comes to a fair boil, put in the oysters and cook as much as you like them. Tastes vary extremely on that point. Stir in a cup of sweet cream or of fresh milk, with a lump of butter as large as a walnut for a small can of oysters. Season with pepper, salt and a blade of mace, if you like. Some persons use white wine instead of milk.

Fried Oysters.—Dip fine oysters in a nice batter, and fry them in butter.

Oyster Patties.—Prepare a rich paste as for a chicken pie; line a bake dish or little patty-pans; set in the stove and bake done, but not brown. Have ready some stewed oysters, with a very rich gravy of butter or cream. Fill the dish or lay a large oyster in each patty, and cover with gravy. You may bake little lids of paste and lay over the patties, but they are usually open. The dish must be covered and baked as a chicken-pie if you bake in a pie-pan.

A dish bottom covered with bread crumbs, then a layer of oysters, with a bit of butter on them, and a sprinkle of pepper and salt; then a layer of crumbs and again of oysters, is a very nice dish when baked well. Layer of crumbs on top.

FOREIGN CORRESPONDENCE.

ON THE BREEDING OF HORSES.

MUNSTER, PRUSSIA, June 8th, 1864.

In one of the most charming valleys of the Teutobung mountains, in the very country where in the year 9 of the Christian era the Roman legions were overwhelmed by the Germans, and the Roman yoke forever broken, there lies near the town of Detmold an old renowned stud.* Its traditions reach back more than a thousand years, and the "Senners" have for centuries borne a high reputation. During the first decenniums of the present century this reputation was partly lost, but during the last 10 or 12 years it has been completely regained. At the great International Fair at Hamburg last year, the stallion "Vindex," belonging to the said stud, took the first premium (400 thalers,) over all his English competitors. Now Vortex is a native of England, but several other horses of the "Senner stud" took premiums also. The establishment is a small one, numbering only 23 breeding-mares, (which never do work,) but it offers a great many interesting points. I may at some other time give you a description of the whole. To-day let me refer only to the principles of breeding practiced there with surprising success.

The stud is at present under the management of Mr. Von Unger. When this gentleman first took charge of the same, some 12 years ago, he found many things that needed reform. There were among the 23 mares, animals of very different structure. There was not one that might be called faultless. Most of the mares had too steep a shoulder, owing to constant pasturing. Their backs were not straight enough. Mr. Von U. knew exactly what structure his future horses were to have; he would have delineated a horse such as would be bred thirty years hence under his care; he knew also that the aim could not be gained at once.

He now compared the horse of his thoughts, his ideal, with the living horses of his stud. He resolved which points of the latter were to be preserved, which to be improved; he then resolved which points were to be altered first. With his mind fully made up, he now began to look around for a stallion which in no way could deteriorate any of the good qualities or points of his mares, but which had the one point aimed at developed in a particularly high degree, and who *had already furnished evidence* that he *would devolve this peculiar point upon his colts;* therefore Mr. V. U. would not buy a young stallion; he must have one who had already numerous descendants; he must see a large number of his colts, and all these colts must uniformly show the aimed at points in perfection.

Such a horse was found in England after much searching. He has completely realized the expectations. His colts are much superior to their mothers; the first point has been gained.

This, however, is not enough. The task is to make the new points gained hereditary. The fillies show it, and they may transmit it afterwards to their colts; but this is not reliable. The colts receive their form and peculiarities not from their parents alone, but frequently the grandsires or great grandsire's faults will reappear, though the sire did not show them. Therefore the fillies have at the time of maturity to be taken to a stallion of the same structure and qualities that marked their sire; a stallion, in other words, who possesses himself, and will transmit the point in question in particular perfection. In this manner several generations of mares have to be treated, until the particular point aimed at may be considered an hereditary quality of the stud.

Then the time will have arrived to correct or improve a second point. Mr. Von U. will then go in search of a stallion who will in no way spoil what so far has been gained, but who possesses the next desired point in great perfection, and has proved that he will produce the same in like proportion in his colts. Again it will take several generations of mares to completely naturalize and make constant this new point among the Senner-race. After this point will have been gained, a third one has to be accomplished in like manner, the aim now being all the time to raise a herd of mares equal in structure and qualities, so that the same stallion can be used for all the mares.

I think this principle right, and that it might be applied also in the breeding of cattle or any other kind of stock. L.

*Establishment for horse-breeding.

WORKING OUT STRAWBERRIES.

Now is the time to work out strawberries so that there may be a good crop next year. The plant should make the principal part of its growth during August, September and October, and I think if it fail to do this it will be unsatisfactory. But during the hot weather, and while the weeds are growing this is neither a small or pleasant job—indeed it is hard work. I will give your readers the plan I have adopted after trying many ways, and every year a new way.

So soon as I can after the picking is done, I run through with a one-horse plow and throw two furrows together, and in so doing, I leave over the whole field a strip unplowed from six to eight inches wide. After this I run across the rows with a good two-horse harrow.

The result is, the plants are thinned out so that I have about as many left as ought to stand. Then we go in with our hoes and make all clean, though we thin out if in any place they are too thick. The hoeing in this way is done as easily as if they were potatoes.

Should they get foul with weeds, I shall run through again with a light fine harrow, but I shall depend much upon a heavy fork, by which we will gently lift up the plants as they stand, and so loosen the ground. In this process some of the roots will be broken, when other and new roots will start, which in a manner will renew the plant. My experience is, that the Wilson can be made to bear year after year on the same ground, if treated in this manner. N. C. M.

Dongola, Ill.

The Cultivator.—An old subscriber, now a Union refugee, writes us:—"In our hegira from Jeff. Davis' dominions last summer, I left with most of our other movables, my file of THE CULTIVATOR for several years, but fortunately supplied the loss when at your office last fall. I consult my five volumes of it often, and find them more useful than any other five of my agricultural works." A. B.

CULTIVATING ORCHARDS.

There are still a considerable number of the owners of orchards who think that plowing them up and tearing the roots will kill them. There are, no doubt, instances where plowing an old orchard that has long stood to grass, has resulted in temporary or permanent injury. We have never, however, met with such cases, and admit the accuracy of the statement only on testimony. On the contrary, we have witnessed a large number of cases where plowing and cultivating have produced the best results. We now speak of *apple* orchards; for no one attempts to assert that the peach will succeed for a series of years when growing on neglected ground or in grass. We have just examined a number of apple trees treated in three different ways, namely—the first growing in a thick sod; the second growing in a sod on one side, but the roots extending into cultivated ground on the other; and the third standing on land the whole surface of which is kept mellow by the plow. The first named trees, namely—those in grass-ground, are about sixteen years old; the others in the plowed and half-plowed ground are twenty-four years old, and, of course, the apples would be expected to be smaller on these older trees. But, during the present summer of severe drouth, the effect on early apples, especially the Early Harvest, has been eminently the reverse. The apples growing in the grass lot were exceedingly affected by drouth; most of them fell from the tree before fully ripe, and before they had attained one-quarter of the usual size. The others hung better and grew much larger, although still much below the usual size in ordinary seasons. We have just weighed a number of the specimens for the purpose of reporting accurately the difference in effect between cultivated and grass-ground. Specimens from the cultivated tree (which was eight years older than the others,) were found to weigh on an average from two and a half to three and a half ounces; while those from the grass lot averaged only an ounce and a quarter to an ounce and a half. Those from the half-cultivated ground were intermediate between the two, or from two to three ounces.

It is proper to add that the older orchard had stood in grass for many years when in the hands of a former occupant; after which it was plowed up deeply without any preceptible injury whatever. No manure has been applied to either of the portions of the orchard. There is no doubt that if the grass in an orchard were kept closely grazed, with an occasional top-dressing of manure applied in autumn, and a sowing of lime or ashes at the rate of fifty bushels or more per acre, it would have an excellent effect, and in some measure compensate for the want of a pulverized surface. Fertile portions of the West may grow orchards to the best advantage in this way. Cultivators must modify their treatment with circumstances; if, for example, (as we stated on a former occasion,) the annual shoots are not a foot in length, the owner may be sure that the trees need higher culture. If, on the other hand, the growth exceeds a foot and a half or two feet in a bearing orchard, we may be satisfied with its vigor, and take no farther pains to increase it as long as this state of vigor continues.

LETTER FROM CENTRAL INDIANA.

INDIANAPOLIS, IND., AUG. 15, 1864.

MESSRS. L. TUCKER & SON—My farm record shows the state of the weather (as to rain) since May 1st, as follows: May 2d, heavy fall of snow and rain; 10th, wet and rainy; 14th, raining at sunset; 15th, 16th, 17th, 18th, variable and showery, considerable rain falling; 24th, rainy; 26th, heavy shower in P. M.; June 9th, rainy; 26th, fine shower in P. M.; July 9th, light shower this P. M., and 10th, light shower A. M., wetting in plowed fields about two inches; 31st, slight sprinkle—not enough to drip from roofs; Aug. 1st, about as much rain as yesterday; 4th, slight sprinkle; 12th, fine shower, wetting about 2½ inches in plowed fields; 13th, very slight shower.

You will perceive that since May 26th we had but one fine shower (June 26th,) up to July 10th. We have had no rain since May 26th sufficient to wet more than three inches in plowed fields, and I may say that the average rain fall of three counties within my observation has been less than my record shows—many of the showers being very limited in extent. During a large part of the time since May 26th there was no dew fall, a dry northeast wind prevailing. As to effect of this weather on the crops: Wheat upon sandy mellow soils produced finely—the average yield in many neighborhoods being over 20 bushels per acre. On clay soils yield much lighter, but on the whole may be called *average*.

Corn has suffered, and all late corn (late planted, I mean,) will not yield more than quarter a crop. A large portion—over one-half—of the corn can be called late, as there were very few fields in my observation which did not suffer from poor seed, cut-worms, and moles—the latter working more vigorously than ever known before. On bottom lands, particularly overflowed lands, (under water on April 25th here,) where it was early planted, the yield will be good, but by no means as good as usual. On all high lands the yield very light, and many think my estimate of one-third an average crop too large.

Potatoes, unless we have soaking rains soon, will be almost a total failure. Fall plowing has not commenced, the ground being too baked to permit its being even fairly done. Besides I fear the unexampled success of the last fall's seeding "*in corn*," may lead to more of the same slovenly practice. I know fields which were sowed "*in corn*" the last week of October, 1863, which yielded over 20 bushels per acre. With us in this immediate vicinity, the wheat crop is larger than I ever knew it before, and nearly all was sowed "in corn."

Hay was a light crop, and owing to scarcity of labor, much was harvested too ripe, and *much not harvested at all*. The latter, at the expense of ruining the meadows for machine-cutting, will help eke out the scanty subsistence of stock this winter, in open weather. Prices rule high, except in stock. So many are selling to save from starvation this winter, it is low. Wages high, and labor scarce. There is no prospect of anything being lower the coming farm year. The surplus is out of the country, the general crop not more than sufficient for home consumption, and labor becoming scarcer, I do not see how prices of produce can decline.

I have written more fully than I intended, but am too much hurried with work to be more concise. H.

How to Distinguish Ripe from Unripe Apples.

When we were picking our apples last season, I was a good deal amused by the account given by the children of the antics and manipulations of a German neighbor in handling an apple or two given him by them when coming home with a load. On further reflection, however, I found the Dutchman knew what he was about, and in fact could distinguish a ripe apple better than I could.

Said the children in giving an account of it: "He took a Seek-no-further in his hand and rubbed it, and turned it; then lifted it to his ear, and shook it. Then he said it was ripe. I wonder how he knew that, as the apples did not appear ripe?" My answer was, "bring me an apple or two, and let us see if we can find out why he rubbed and shook those you gave him."

When a ripe apple is turned and rubbed lightly in the hand, a slight rustling noise is made, similar to the rustling of dry leaves or old paper; and when shook opposite the ear, a hollow, half-hissing noise may be recognized somewhat like that from turning the fruit in the hand, and similar to the seething noise of the air in the sea-shell when the child lifts it to his ear.

I afterwards cut open a number of apples, partly to confirm what I knew before, namely, that the seed cavity of ripe specimens is always larger and drier than in unripe ones, but more especially to ascertain the reasons why the German could so readily detect the ripe from unripe fruit. I may as well say here, that by *ripe*, I mean the condition of full and complete growth, not that mellowness of touch and changed color which indicate the first stages of decay, but which are usually called signs of ripeness. Maturity is perhaps a better term than ripe to distinguish completion of growth, as distinguished from an eatable condition.

When apples are still in a growing condition, and consequently immature, the seeds, as is well known, are pale in color; but when growth is finished, the seeds change to a dark brown color. This is all generally found in the books. Not so, however, as to some other points immediately involved. For instance, the seed cavity of growing apples contains more or less *moisture*, and is much *smaller* than in ripe ones; while the cavity in ripe ones is much larger—in soft sorts like the Yellow Bellflower, about twice as large—than when they are still growing rapidly. My idea is, that the seed cavity serves as a reservoir to contain a supply of nutriment for the growing fruit, and when the demand for nutriment ceases, the residue of water is dissipated by evaporation; the cavity enlarging in consequence of the extraction of moisture from it, or more correctly perhaps, because moisture is no longer conveyed into it from the roots and leaves. In any event, the two different facts that distinguish ripe from unripe applies, namely, the drier and larger *air* chamber about the seeds in ripe, and the smaller sap reservoir or *water* chamber at the core of the growing apples, may be considered undeniable; and in this distinction consists the reason of the German's manipulations, of his means of so quickly deciding between the ripe and unripe, *without reference to texture or color* of the fruit.

The air in the seed cavity of ripe apples causes a slight seething noise when the fruit is in motion, in addition to which the seeds in some sorts are partly loose and add to the effect. But in green or growing apples, the sap or moisture in the seed cavity shuts out the air, and precludes such seething noise when the fruit is shaken; and the same facts explain why ripe apples make a rustling noise in the hand, when green or unripe ones afford no such results. I never questioned the German on the subject, but thought I might as well indulge a few reflections as herein stated.

Green Lake Co., Wis. J. W. CLARKE.

MAPLE SUGAR IN WILMINGTON VT.

MESSRS EDITORS—Having seen within a few months past numerous accounts of the amount of maple sugar manufactured in different shool districts, towns and counties, I will present a statement of the amount of maple sugar manufactured in this town the past spring. The statistics of the number of pounds of sugar made by each person or family, and the number of trees from which the sugar was made, are given in the following table by school districts in the order in which they were taken:

No. of Dis.	No. of pounds of Sugar made.	No. of Trees tapped.
No. 1	18,757	5,775
2	41,405	11,018
3	18,000	6,215
4	5,275	2,043
5	20,705	6,699
6	34,500	6,897
7	4,600	1,685
8	8,700	2,462
9	13,800	3,750
10	28,420	6,890
11	13,175	4,187
12	10,460	3,385
13	8,500	3,055
14	19,820	6,315
15	11,650	2,912
16	2,886	1,475
	260,653	74,751

This makes an aggregoge of 260,653 pounds of sugar made from 74,751 trees, which makes an average of a little over 3½ pounds, made from each tree tapped. The whole amount made divided by the number of school districts, gives a fraction over 1,629 lbs. to each district. It also gives about 180 pounds to each inhabitant of the town.

Calling the price of sugar 15 cents per pound at the time it was made, and it would amount to the sum of $39,097.95. This would give a little more than $2,443 to each school district, and a fraction less than $27 to each inhabitant of the town. Not having the original statistics at hand, I am unable to give the largest or the smallest average number of pounds of sugar made from the different sugar orchards, but one statement will show the different yields of sugar obtained from different lots.

One man informed me that he set two hundred tubs in his lot, and from these trees he made between ten and eleven hundred pounds of sugar. Another man, whose farm joins this, set about 600 tubs, and only made about the same quantity of sugar that the other man made—the yield of sugar in one lot being over five pounds to the tree, and in the other lot being less than two pounds per tree. This difference in the yield of sugar orchards, is mainly owing to the difference in the quantity of sap produced by the different orchards, and also to the greater or less saccharine strength of the sap produced.

Many other interesting facts might be elicited from the subject, but enough has been already written to show the comparative value and importance of the the maple sugar crop in those places where the manufacture of the article is thoroughly and successfully prosecuted.

Wilmington, Vt. C. T. ALVORD.

TOP-DRESSING OLD MEADOWS.

The best piece of grass we have cut, and about the best we have seen in this season of unusual drouth, when the rays of the sun glow out with heat like a furnace, and the moon pursues her course dry and red like a globe of fire, when meadows are parched, and pastures are barren as though December frosts had blighted their verdure, was taken from a piece of upland meadow that has not been plowed for twenty-one years, during all which time the meadow has in no instance failed to produce a heavy crop of choice hay.

How was it Managed?

The year previous to seeding down it was planted to potatoes, manured, according to an established custom of those days, in the hill, with litter or coarse manure. The potatoes were plowed out and well hoed twice. The crop of course was good, for the potato rot was almost unheard of then, and a sure crop was pretty sure to follow planting and good clean culture. The following spring the ground was deeply plowed, sowed to oats, and harrowed until mellow enough for any garden purpose. It was stocked previous to the last harrowing with clover and timothy, mixed in proportion of a half bushel of grass seed to the acre. The oat crop was well enough—pretty good I suppose, and the stocking was magnificent.

Since then it has been mowed every year, and has invariably produced a good crop, with no other help than a top-dressing of manure or occasionally an application of plaster. Last April we gave it a top-dressing of horse manure, fresh from the stable, but free from litter, at the rate of twelve loads of thirty bushels each to the acre, which was spread from the wagon as evenly as possible, after which it was gone over and all lumps broken and evenly spread. Several snows fell upon it, which, with the few rains that have followed, not only prepared its nutritive qualities for the roots of the plants, but settled the remainder of the substance closely around them as a protection from hot sunshine and drouth, so that in mowing there was no hard dry lumps to interfere with the operation or to clog the rake in bringing the hay together.

Here is a point in the operation which often causes failure in dressing lands. The compost or manure applied is heedlessly spread, and the work is left unfinished, with lumps to dry and remain incumbrances instead of helps to the growth of plants. They do not readily soak in the rains, and it requires a long time for them to become incorporated with the soil and a protection to the roots it is so fully adapted to benefit. We have full confidence in the good effects of top-dressing, either in fall, winter, or early spring, but cannot warrant success unless the work is finished by reducing and spreading all lumps, so that the surface is as smooth as before the operation.

Our course is, after the manure is as evenly spread from the wagon as can be, to go over the ground with a long handled mallet to reduce the lumps and a hoe to spread them, by doing which we get the thing done just right. It is labor to do so we know very well, and involves rather more pains-taking than many farmers are willing to adopt. But it is the labor in which there is profit, and any one will find it so. By pursuing this course, top-dressing will give good results, whether performed in spring, or at any time after a crop is taken off in late summer or autumn, or on the snows or frozen ground of winter.

In many sections of country, meadows are suffering severe injury from the drouth of the present season. Many of the grass roots are killed, and more are severely injured. Unless something is done to help such meadows, they cannot recover to give good crops in one or two years. Plowing and re-seeding them all is impracticable, if not impossible. We can think of nothing that appears to warrant quick and sure restoration, quite as good as thorough top-dressing. It is not important that this should be given entirely from the barn-yard or stable. Any good mellow compost that will fill the interstices which are so common around grass roots, will protect them and help their growth, though the nearer the material applied is related to the produce of the farm-yard, the better.

Farmers in this region are getting more attentive to top-dressing their meadows every year, and as they say, find it one of the best paying investments of their manure; besides, it is a great object in this day of mowing machines, when the meadow is once laid smooth and cleared of stones, to keep them in that condition as long as possible. *. *July* 24, 1864.

Preparing for Fall Crops---"Skimming."

MESSRS. EDITORS—There is one saying—there is nothing new under the sun—which has often apparently some truth. My faith in it, however, was badly shaken on reading the interesting communication of "L." of Prussia, and your remarks on the same, (p. 25.) It is somewhat strange that the system recommended by him was neither practiced nor preached in America before. Its merits are so apparent after its examination, as to lead to the supposition that it is *too good* to be new. The operation of "skimming," as dictated by "L.," seems peculiarly adapted to precede the usual preparation of the soil for fall crops, or for fall-plowing as practiced in this country. It will be found as efficient, perhaps, as ordinary manuring, especially if we consider it as a mulch. The burial of the stubble, grass, &c., just sufficient to promote its decomposition, would form a mulch for efficiency superior to heavy manuring—thus judiciously disposing of the stubble, &c., which has hitherto been considered as a nuisance, and which would otherwise be wasted on the "desert air." And here let me make a remark on your observation respecting experiments to ascertain the merits of this system. There are generally so many circumstances likely to have an effect on an experiment of this kind—so many details that should be considered, as to almost preclude the possibility of arriving at anything like a true result. There is, fortunately no necessity of experimenting to demonstrate the merits of this theory, (if it can be so called;) its advantages will be at once sufficiently obvious to any experienced mind. J. F. C.

Farm of Millwood, L'Original, C. W.

How to Relieve Choked Animals.

MESSRS. L. TUCKER & SON—I have long been a subscriber to your valuable paper, and have often seen receipts for relieving animals when choked, but nothing, to my estimation, is equal to the following:

When you ascertain a creature is choked, pour a pint of oil or melted lard down its throat. Let it have its liberty, and it will soon relieve itself. I have tried it several times, and always with success.

Delafield, Wis. A. G. G.

Philosophy of Pruning Trees and Shrubs.

There is no part of hedging which requires the exercise of so much good judgment, as is necessary in clipping and pruning correctly. In fact, the entire success of a hedge, in one sense, depends on the *manner* of pruning, and the period of time when it is done. A few random slashes at an improper time, in a certain stage of the growth of a hedge, or at a particular time in the year when the hedge did not require clipping, would be followed by injury not readily repaired. Clipping and pruning is the life and beauty of hedges and plants; and it is no less their ruin and destruction, when done at an improper time and in an improper manner. To tell on paper *when* is the proper time to clip a hedge or not to clip it, or to prune a tree or not to prune it, under all circumstances, would be a task which has never as yet been done, and which I do not expect to tell in this place. But it is not difficult to state what *effects* usually follow clipping or pruning at a given period, when different parts of a tree or plant are pruned.

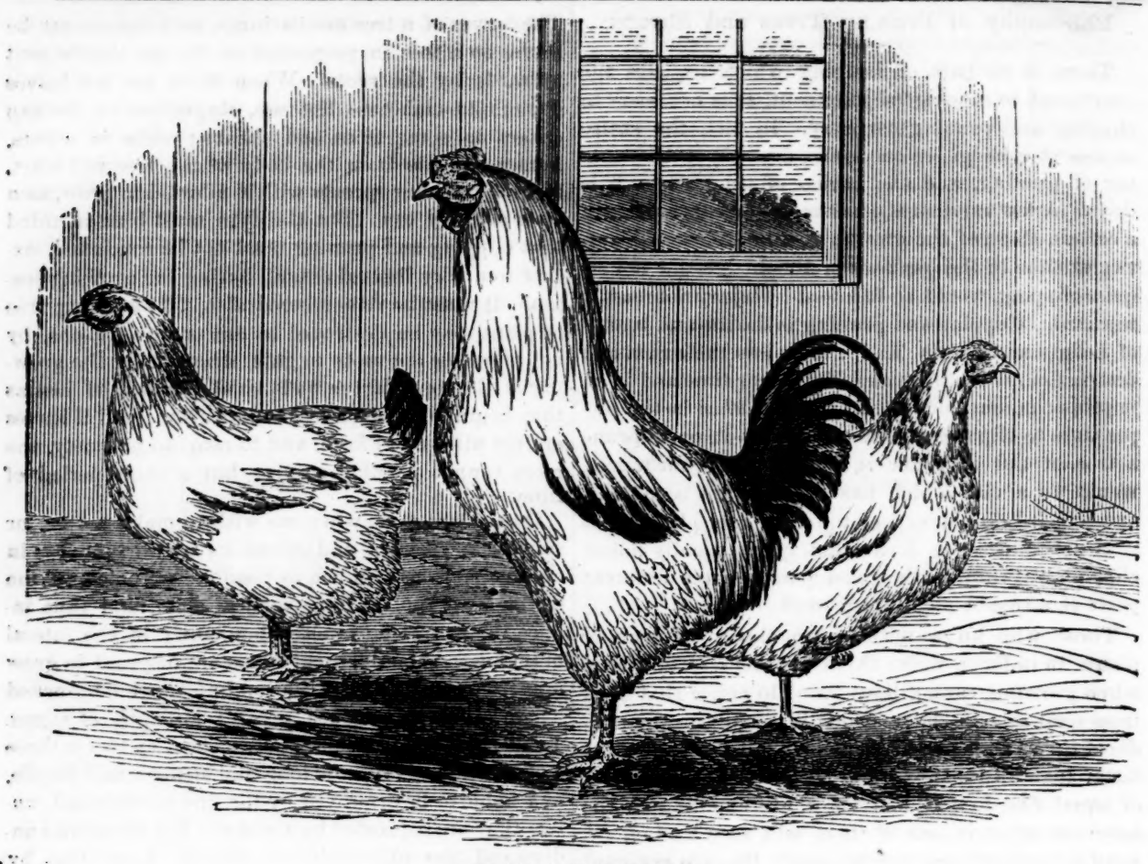
Those who know nothing practically of pruning plants, in order to make them assume a certain form when growing, cannot have failed to notice that most trees send up one shoot, which is usually in the middle of the sprouts and limbs, which is disposed to grow faster than all the rest; and if three or four sprouts, of equal size, height, and vigor, are standing on the same parent stem, one of them will soon lead off beyond the others, and attain, many times, a rampant growth, while its fellows will grow but little, if any; and sometimes the sprout which takes the lead in growing, draws so much of the nourishment from the roots that one or more of its twin sprouts will die in one season, for want of the proper nourishment which the plant of rampant growth has appropriated to its own growth. Now if we protect and cherish this sprout in its ascendancy over the others, it will shortly push upwards with so much rapidity as to always maintain the ascendancy. And if it is our aim to make a tall tree, by promoting the growth upwards, we have only to cut off the lateral branches all round this leader, and thus induce as much of the sap to feed the leading sprout as is possible. But there is great danger of cutting off too much of the lateral branches. It would by no means be attended with the best results in promoting the growth of a tree upwards, to trim it to a bare steam, leaving but a small bush near the top. If all the lateral branches are cut off close to the leading stem, and a very small top only left, if there be a strong healthy root, that very small top cannot use up all the sap, and a *reaction* will follow; and sometimes such a reaction is attended with deleterious consequences to the tree. On this point thousands of young farmers, in their eagerness to promote the upward growth of their young fruit trees, by trimming small trees to a single stem, with nothing but a few buds or branches of leaves near the top, have found that their trees grew very slowly, when every thing—aside from this excessive pruning—favored a rampant growth. The truth is, if a tree has a healthy, strong root, the leading stem will grow upwards much faster by clipping off the ends of the lateral branches—unless it has a very heavy top—than it will to cut off most of them close to the stem. The leaves of a tree are its lungs, and there must be leaves on a tree in proportion to the sap that is sent upwards by the roots. When there are not leaves enough to elaborate the sap, stagnation of the sap ensues in some trees and shrubs; while in others, numerous buds from the body of the tree will start, and long slender sprouts will, if allowed to grow, soon form a heavy top. But the tyro must bear in mind that clipping and pruning must not be continued, except to a very limited extent, during the growing season. It must be remembered also, that a young tree or plant may be destroyed in one or two seasons, by not allowing the roots to gain strength by the growing of the top. If the buds be all pinched off just as they begin to unfold, a tree cannot grow; and if leaves are not allowed to form, and to come to maturity, the roots cannot possibly survive but a short period of time.

On the contrary, when we wish to make a tree, or shrub "grow low," and extend its lateral branches in every direction, as much as possible, we pinch off the tip ends of the leading, vertical stem, and thus induce the sap to flow more abundantly in the lateral branches. When vertical stems are disposed to grow upward too rampantly, the top bud must be pinched off, in order to produce greater strength of stems. Young grafts, or inoculates, often shoot up two or three feet, if allowed to grow long and slender, and fragile, and liable to be destroyed by the first strong wind, unless they are supported by a stake. But those who understand the philosophy of pruning, know that by pinching off the terminal bud, the upward, rampant growth will be checked: and the shoot will begin to enlarge in thickness, and to increase in strength, and to send out lateral shoots, where nothing but buds existed. The true reason for this phenomenon is, the sap is now distributed more equally among the other branches, which was before strongly attracted to the leading stem.

This is the great advantage of pruning in summer when the sap flows most abundantly; and this is one grand end to be attained in hedging to make the plants grow low and thick, and having a broad base. But wisdom dictates that it is many times infinitely better for a tree or a hedge, to allow it to grow at random during the first season, in order to allow the roots to get a good start. Then the next season the entire top may be cut off, when a new top will be formed, which will in some instances be larger at the end of the second season than it would have been had the top not been cut off.

Young farmers must read and think, and think and read, and make inquiry and observations on this subject for years, before they will be prepared to cut and prune correctly. S. E. T.

Blight in Apple Trees.—The apple tree blight has recently made its appearance in this locality, and it destroys portions of young apple trees, in a very rapid manner. The limbs—the *wood* and not the leaves—are first attacked, and a portion of it a few inches long, becomes withered, dried, and dead as a dry dead stick during the day; and still the leaves and the wood *above* the blight will be alive, and show no signs of withering for a day or more, when they both die, and appear as if they had been exposed to an intense heat. It is quite different from anything that we have ever before witnessed. S. Edwards Todd. *Auburn, N. Y., July 28.*



BRAMAH FOWLS.

MESSRS. TUCKER & SON—I send to-day by Express an electrotype of a trio of "Bramah Fowls," taken from life by PAGE.

After several years' experience I find this variety well adapted to the general purposes for which fowls are kept.

They possess size, beauty and hardiness in a great degree, and are very prolific. Their eggs, which are large, surpass all others in richness; and, like most fowls with light plumage and yellow legs, their flesh is of good quality. I have obtained from fifty-five fowls in the month of March, ninety-two and a half dozen of eggs. They excel all others as winter layers.

I have raised the present season a hundred and twenty-five chickens with quite ordinary care.

South Framingham, Mass. H. G. WHITE.

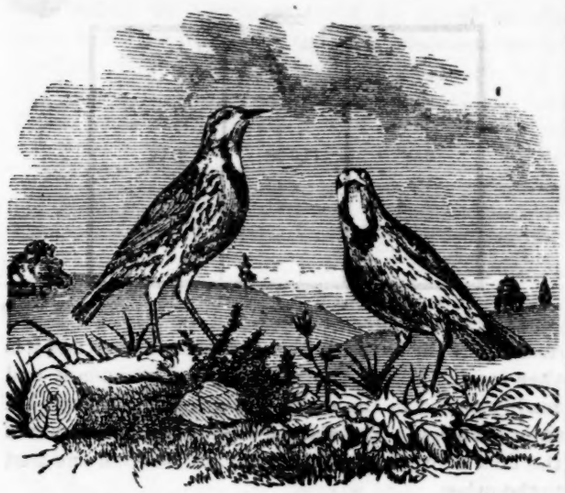
NEAT PREMISES.

A great difference may be observed in good farmers, so far as keeping their premises in neat and finished order is concerned. With some, no weeds, briars or bushes, are seen along fences, no gates off their hinges, and no tools out of place or exposed to the weather. Others, successful in most particulars, are careless in these and similar respects. This is doubtless partly owing to the force of habit, partly from a slovenly mind, and partly by undertaking more than they can well accomplish. As a general rule, the neat farmer is the most successful one—this we have observed in a large number of instances, and the exception is probably not one in twenty. The reason of this is that the man of order and energy, qualities required for the best success, carries out his ideas of order in all their details, and does not do a smart thing in one place and a stupid thing in another.

It, however, sometimes happens that order and neatness are neglected because everything is not thought of at the right time. To obviate this difficulty, every owner or manager of a farm should carry a small memorandum book in his left pantaloons pocket, where it will always be at hand whether he throws his coat off or not. Wherever he passes he will, of course, have both eyes open, and everything which he sees out of order or requiring attention which he cannot instantly rectify, he should at once enter in his book—such for instance, as a broken gate, latch, a board knocked off the fence, a harrow left in the field, a batch of thistles left uncut, a burdock and a bunch of elders growing in a corner of the fence, a wagon with a defective linch-pin, a weakened strap in his harness, and a hundred other matters of a similar character. The first day that can be spared either by himself or one of his best workmen, should be devoted to putting these things all in order with the memorandum book or a copy of it before him, where everything is crossed out as fast as they are completed.

By adopting this course as a regular system, the whole premises would soon be found to have assumed a neat and satisfactory appearance, and, as a matter of economy, no labor will probably be so well expended.

An Aged Pony.—The London Field announces the death of "the well known veteran pony belonging to Mr. Dampier, at the extraordinary age of sixty years."



MEADOW LARK---*Sturnella magna.* Sw.

The Meadow Lark is among our best known birds. He has been described and re-described so often, that it seems almost a hopeless task to add anything new. However, for the benefit of the general reader who may desire to be informed upon the subject, who may not have access to the works given above, we will proceed to give his history.

The Meadow Lark is an inhabitant of the entire eastern coast of the United States, extending as far North as the High Central Plains, and South to Mexico. On the western coast, however, its place is supplied by a very closely allied species—*Sturnella neglecta*, AUD. This western species so closely resembles the eastern one, that it is very difficult to distinguish them. In the description of the birds, at the close of the article, we shall endeavor to point out some specific differences by which the two species may be distinguished from each other.

The Meadow Lark cannot boast of the powers of song that so eminently distinguishes the Sky Lark of Europe; but, so far as plumage is concerned, far surpasses it.

The flight of the present species is peculiar. Rising from the ground with a "*whirr*"—somewhat like that of the American Partridge, but not near so loud—they wing their way in a bee-line, with occasional flappings of their wings, and then a sail through the air, for the distance of four or five feet, and then the quick flappings of their wings are repeated. This manner of flying of theirs has been called "slow" by some writers, but we are *sure* that they make such good time by this "slow" method of theirs, that they escape, in many instances, from the gun of an "excellent shot."

In the eastern part of Pennsylvania they inhabit old meadows and fields, and from their pursuing a similar course in Virginia, are called by the inhabitants the "Old Field Lark."

Among the grass (principally in small tufts) they build their nests. These are constructed in an artistic manner worthy of the bird. The shape can readily be understood by taking a bowl and placing it upon its side. Now imagine the nest to be of this shape, with the exception of its having the front (where the open part of the bowl would be) carried downwards a little, so as to leave the entrance near the ground. As the nest is constructed out of the same material as that which composes the tuft within which it is placed, it is not readily noticed. Often the bird bends down the tops of the grass of the tuft within which is the nest, in such a manner as to effectually conceal it. The inside of the nest is lined with fine stalks of the same material. Upon this the female deposits her eggs, which are usually five; their ground color is white; spots and blotches cover this with great irregularity. Their markings vary very considerably, but are all of a reddish brown color. They measure on an average $1\frac{1}{8}$ inches in length by $\frac{5}{8}$ of an inch in breadth.

The Meadow Lark collects in flocks after the breeding season is over. The young birds associate with their parents. These flocks assume a greater magnitude as the season advances.

SPECIAL CHARACTERISTICS.—The feathers above, dark brown, margined with brownish white, and with a terminal blotch of pale reddish brown. Exposed portions of wings and tail with transverse dark brown bars, which, on the middle tail feathers, are confluent along the shaft. Beneath, yellow, with a black pectoral crescent, the yellow not extending on the side of the maxilla; sides, crissum, and tibiæ, pale reddish brown, streaked with blackish. A light median and superciliary stripe, the latter yellow anterior to the eye; a black line behind.

"Length, 10.60; wing, 5; tail, 3.70; bill above, 1.35."*

The young birds want the pectoral crescent in a more or less degree.

The Western species (referred to at the commencement of this article) can readily be distinguished from the present one by observing carefully the following diagnoses:

"Yellow of the chin and throat not extending on the side of the lower jaw. Tail feathers and tertials with the centres dusky, and sending out scollops or dentations of the same color towards the margins..... *S. magna.*

"Yellow of the chin and throat extending on the side of lower jaw. Tail feathers and tertials with a tendency to transverse isolated bands..... *S. neglecta.*"†

To AUDUBON belongs the honor of first describing the Western species, to which he gave the name *Sturnella neglecta.* J. P. NORRIS.

CURE FOR DYSENTERY.

Dr. Page of Washington City, communicates to the *Republican* of that city the following remedy, long known in family practice, and which was recently tried in the camp of the New-York 22d regiment, where there were from eighty to one hundred cases daily, and with rapid cures in every case:

Receipt.—In a tea-cup half full of vinegar dissolve as much salt as it will take up, leaving a little excess of salt at the bottom of the cup. Pour boiling water upon the solution till the cup is two-thirds or three-quarters full. A scum will rise to the surface, which must be removed, and the solution is allowed to cool.

Dose.—Table-spoonful three times a day till relieved.

The rationale of the operation of this simple medicine will readily occur to the pathologist, and in many hundred trials I have never known it to fail in dysentery and protracted diarrhœa.

Yale Scientific School.—WM H. BREWER has been appointed Professor of Agriculture in this institution. Mr. B. is a graduate of the scientific school, after which he spent some time in study abroad; he is well qualified for the position, both by taste and education. Prof. B. is now engaged, we believe, on the State geological survey of California.

A SHEEP BARN.

Good managers of sheep have long since discovered that the most economical investment is for the erection of buildings for shelter. The amount of food consumed is less, and the growth of wool is much greater, while casualties rarely occur when these animals are protected from the weather. At the present time, when the price of wool is so high, sheep raisers feel an additional interest in the subject; and frequent

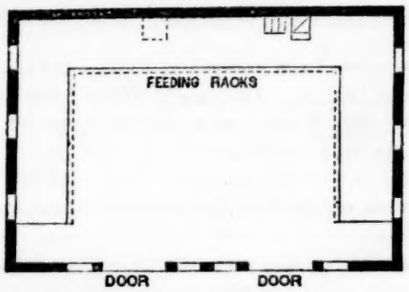


Fig. 1.—Basement.

inquiries are made for the best plans of sheep barns. Now that the labors of harvest have closed, they are desirous of making the necessary provision during autumn for the coming winter.

Among some of the plans which we have examined, we particularly recommend the following, and trust that our readers will suggest farther improvement: The barn is a two-story building; consisting of a stone basement set in a hill-side, on which rests the frame structure above. The basement, fig. 1, is built on the south side of a hill-side, and consists of a stone wall on three sides not less than seven feet high; the front, facing the south, consists of a board partition and two wide doors, say seven or eight feet wide, hung so as to rise and fall when opening and shutting. The arrangement for this purpose is easily effected by means of counter-poising weights, which may be either of hewn stone set with iron hooks, or small, stout oak casks filled with broken cast-iron and sand. For determining the proper amount of weight for balancing the doors, the latter may be first weighed, or their weight calculated very nearly by allowing about thirty-two pounds to the cubic foot, if they are made of white pine, as they should be. The weights, if of limestone or sandstone, will weigh about one hundred and fifty pounds per cubic foot. The mixture of cast-iron and sand will be a little over three hundred pounds per cubic foot. Any one understanding arithmetic will easily determine very nearly the size for the weights, and an accurate adjustment may be afterwards made by adding to or taking from them. They should be hung with small chains running over stout cast-iron wheels or pulleys. Doors thus made are easily opened and shut without being impeded by snow or accumulations of straw or manure, as might be the case with doors hung on hinges or running on rollers. They may be opened to any desired height, so as just to admit sheep and exclude cattle and larger animals.

On the three sides of the apartment enclosed in the basement, and six or eight feet from the walls, are the feeding racks, as shown in the cut, (fig. 1.) If more space is desired for the sheep, there may be but one line of racks, extending the length of the apartment. The dotted lines show the place of the trap-

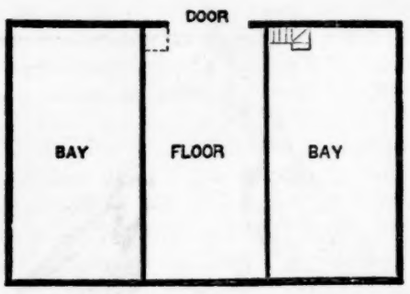


Fig. 2.

door where the hay is thrown down from above, and it is then carried along the alley by the attendant and readily placed in the racks, the sheep being excluded from the alley. The stairs are placed at the corner of the floor above, and afford ready access from one part to the other.

The second floor, fig. 2, needs but little explanation. The hay is drawn in at the door, (an embankment being made against the wall for this purpose,) and pitched into the bays on either side. For the purpose

Fig. 3.

of ventilation a window is placed in the upper part of each gable, which is opened and shut by means of a cord running over the necessary pulleys, and extending down to the floor.

The size of this barn may be varied according to circumstances. If 30 by 40 feet, the floor may be 14 feet wide, which will leave each of the bays 13 by 30 feet, or 390 cubic feet in each for every foot of rise. Consequently these bays will each hold about one ton of timothy hay for every foot and a quarter, and if the posts are 14 feet, they will contain each about 15 tons if stored to the peak, or about 10 or 11 tons of clover hay. This will be more than an ample supply for all the sheep that can be profitably kept in the basement.

A modification of the plan is shown in fig. 3, and will be preferred by many. It consists in placing two lines of two sided racks, one under each edge of the floor above; a row of trap doors along the sides of the floor admits of these racks being filled without going

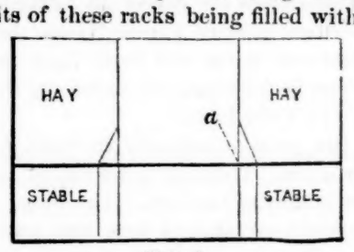


Fig. 4.

below. The best way of forming these trap doors is shown in fig. 4, the doors being made to swing down to the floor when open, and to shut up against the base of the mow when closed, as shown at *a*.

A Ride over Long Island---The Crops and Other Matters.

In riding the length of the Long Island railroad from Brooklyn to Greenport, one, otherwise not informed, would place but a poor estimate on the soil of the Island for farm purposes, as much of the land through the middle of the Island is chiefly pine and oak barrens, on a very light, sandy soil. But on either end of the railroad the soil is good, and considering the dry weather, I was surprised to find the crops so good. The wheat had been cut, but the stubble indicated a heavy crop. Oats too were mostly cut, but those still standing promised a good yield, though the straw is short. Indian corn looks remarkably promising—the growth is strong and uniform, and of the richest green. I did not notice a field that had been properly cultivated, that seemed to be suffering from the drouth. The refreshing showers of last week must have given it a start.

In the Hamptons—the towns on the eastern arm of the Island, bordering on the ocean,—the crops are fine. Hay good, and has been got in, in the best order. The wheat above an average crop, both in quantity and quality, and Indian corn has seldom looked better. The soil on this part of the Island is loamy, and the fogs of the sea go far to ward off the effects of drouth, which in some sections in the interior are severe. On this portion of the Island the dry seasons frequently prove more favorable to the farmers than excessively wet ones. On the sandy portions the reverse of this, of course, is true.

From the fact that some portions of Long Island have been about as long settled and under cultivation as any other part of the country, it must be inferred that some of these lands have been badly worn, and now require considerable aid from manures to insure remunerative crops. This fact, I believe, has proved beneficial to the farmers and the country. It has demonstrated the value of manure, and the importance of thorough cultivation. Although the farmers of Long Island pay a very large per centage of their returns from their crops for manure, yet they are among the most prosperous farmers of the State. The kinds of manure employed are very various. In addition to yard and stable manure, large quantities of sea weed is hauled from the bays and inlets and used as manure. Besides this, millions of fish are annually caught, which were formerly applied directly to the land, or made into compost and applied to the tall crops, but of late years these fish go through a process that extracts the oil, and the more substantial portions manufactured into *guano*. Where a supply from these sources is not at hand, ashes, ground bones, and Peruvian guano are largely used. The farmers, though economical and calculating, do not withhold the manure at whatever cost. The eastern half of Suffolk county abounds in muck-beds, and I noticed along the road that many of the farmers were manifesting their wisdom and fore-thought by getting out huge piles of this valuable material while the dry weather favored the operation. The value of muck as a fertilizer is not sufficiently appreciated by the great body of the farmers in the country where it may be obtained. But the time will come when a resort to the muck-beds, as well as to all other sources of supply for manure will become a necessity. H. P. B.

Sag Harbor, L. I., Aug. 2.

A Flax Patch and the Result thereof.

I have just been spending an evening with a neighbor, and during my stay I alluded to the Russian flax and its introduction, when the lady, Mrs. Wm. Colvin, near Brownsville, Pa., informed me that she had urged her husband to raise some last year, and that he remononstrated, and stated that it would cost over $1 per yard, and would not pay. She then sent and purchased one-half bushel of seed, and requested permission to sow it in one corner of the oat-field, which was granted, and she quietly kept an account of the operations. When I saw the account, I asked permission to copy it, and I now present it. It stands as follows:

To ½ bushel seed,	$1.50
Plowing and seeding same,	1.00
Pulling,	1.50
Six days dressng, $1.25 per day,	7.50
Board of same,	1.50
Spinning 65 days, 18¾	12.18¾
Weaving 62 yards at 10c.,	6.20
	$31.20¾
Sold and kept on hand seed to the amount of ...	12.00
	$19.20¾

She had 62 yards of linen one yard and three inches wide, at a cost of less than 30 cents per yard—could get 87½ cents per yard for same, showing a clear profit of over 50 cents per yard. I would add that although I sold them the seed, I have none for sale—do not grow any. I merely helped to introduce it into my native county. John S. Goe.

Near Brownsville, Pa., July, 1864.

Embree & Speakman's Patent Swather.

I have just finished harvesting my oat-crop with the assistance of the above mentioned machine, and I am so well pleased with its performance, that I thought I would speak a good word for it to my fellow farmers through your useful journal. It consists of a revolving web of heavy linen, moved by a small driving wheel of its own, which carries the cut grain towards the heel of the cutter-bar, when the buts strike the ground first, and the tops are carried around by a projecting wing of heavy sheet iron, and left on the gound—where the grain stands up—in handsome swath; where the grain is lodged, it is laid as well as any other method of cutting would do. My oats were very much down, so that we had to cut nearly all of it in one direction only, thus requiring more time and also the assistance of a boy to follow the machine, and occasionally draw off some heavy bunches; but myself and boy cut in one day what would probably have taken a man five or six days to cut with a scythe or cradle. In standing grain, wheat, oats or barley, any man, woman or child that can manage a pair of horses, can do the work in a manner equal to the best cradling I ever saw; and then a neighbor suggests that with a steel-toothed horse-rake it can be raked into grips ready for binding, the rake taking two swaths at a time, thus expediting the business of harvesting, as well as saving labor these war times.

The machine is manufactured by George Ladley, West Chester, Pa., and can be attached to any mower in which the cutter-bar is behind the driving wheel, as in the Kirby or Hubbard. My own is the latter.

Concordville, Delaware Co., Pa. B. W. P.

A fellow that doesn't benefit the world by his life does it by his death.

List of Agricultural Exhibitions for 1864.

STATE, PROVINCIAL, &c.

American Pomological..Rochester,	Sept.	13, 16.
California..Sacramento,	Sept.	— —
Canada Upper..Hamilton,	Sept.	26, 30
Illinois..Decatur,	Sept.	12, 16.
Indiana..Indianapolis,	Sept.	3, 8
Iowa..Burlington,	Sept.	27, 30.
Kentucky..Louisville,	Sept.	6, 10.
Michigan..Kalamazoo,	Sept.	20, 23.
National Horse Show..Detroit,	Sept.	13, 14.
New Brunswick..Fredericton,	Oct.	4, 7.
New-England..Springfield, Mass.,	Sept.	6, 9.
New-York..Rochester,	Sept.	20, 23.
Ohio..Columbus,	Sept.	13, 16.
Pennsylvania..Easton,	Sept.	27, 30.
Vermont..White River Junction,	Sept.	13, 16.
Wisconsin—Janesville,	Sept.	26, 30.

COUNTY AND TOWN—MAINE.

Cumberland..Portland,	Sept.	— —

VERMONT.

Addison..Middlebury,	Sept.	28, 29.
Champlain Valley..Vergennes,	Sept.	21, 22.
Chittenden..Burlington,	Sept.	27, 28.
Connecticut Valley..Bradford,	Oct.	4, 6.

NEW-HAMPSHIRE.

Merrimac..Concord,	Sept.	26, 28.

MASSACHUSETTS.

Barnstable..Barnstable,	Oct.	4, 5.
Bristol..Taunton,	Oct.	4.
Berkshire..Pittsfield,	Oct.	4.
Essex..Lawrence,	Sept.	27.
Franklin..Greenfield,	Sept.	29.
Housatonic..Great Barrington,	Sept.	28.
Hampshire, Franklin & Hampden..Northampton,	Oct.	6.
Hampshire..Amherst,	Oct.	13.
Hampden..Springfield,	Oct.	4.
Hampden East..Palmer,	Oct.	11.
Highland..Middlefield,	Sept.	15.
Hoosic Valley..North Adams,	Sept.	20.
Middlesex—Concord,	Sept.	22.
Middlesex South..Framingham,	Sept.	20.
Middlesex North..Lowell,	Sept.	29.
Martha's Vineyard..West Tisbury,	Oct.	18.
Nantucket..Nantucket,	Sept.	27.
Norfolk..Dedham,	Sept.	29.
Plymouth..Bridgewater,	Oct.	6.
Worcester..Worcester,	Sept.	22.
Worcester West..Barre,	Sept.	29.
Worcester North..Fitchburg,	Sept.	27.
Worcester South—Sturbridge,	Oct.	6.
Worcester Southeast..Milford,	Sept.	27.

CONNECTICUT.

Connecticut Horse Show..Hartford,	Sept.	13, 15.
Fairfield..Norwalk,	Sept.	27, 30.
Middlesex..Middletown,	Oct.	5, 6.
New-London..Norwich,	Sept.	21, 23.

NEW-YORK.

Allegany..Angelica,	Sept.	15, 16.
Broome..Binghamton,	Sept.	13, 15.
Cattaraugus..Little Valley,	Sept.	27, 29.
Chautauqua..Fredonia,	Oct.	4, 6.
Columbia..Chatham Four Corners,	Oct.	12, 14.
Columbia Association..Hudson,	Sept.	28, 30.
Chenango..Norwich,	Sept.	26, 28.
Ellisburgh, Adams and Henderson..Adams,	Sept.	13, 14.
Erie..Buffalo,	Sept.	14, 16.
Franklin..Malone,	Sept.	27, 29.
Greene..Cairo,	Sept.	29, 30.
Jefferson..Watertown,	Sept.	15, 16.
Lewis..Turin,	Oct.	4, 6.
Newburgh Bay Horticultural—Newburgh,	Sept.	28, 30.
Oneida..Utica,	Oct.	3, 6.
Orange..Goshen,	Sept.	7, 8.
Orleans..Albion,	Sept.	14, 15.
Oswego Falls..Oswego Falls,	Sept.	27, 29.
Otsego..Cooperstown,	Oct.	5, 6.
Ontario..Canandaigua,	Sept.	28, 29.
Oxford..Oxford,	Sept.	19, 21.
Putnam..Carmel,	Sept.	14, 16.
Queens..Jamaica,	Oct.	5, 6.
St. Lawrence..Canton,	Sept.	27, 29.
Smithville..Smithville,	Sept.	14, 16.
Susquehanna Valley..Unadilla,	Sept.	27, 28.
Trenton Union..Trenton Falls,	Sept.	27, 29.
Ulster..Kingston,	Sept	21, 23.

NEW-JERSEY.

Burlington..Mt. Holley,	Oct.	4, 5.
Cumberland..Bridgeton,	Sept.	28.
Monmouth..Freehold,	Sept.	21, 22.

PENNSYLVANIA.

Bucks..Newtown,	Sept.	27, 28.
Chester—West Chester,	Sept.	23, 24.
Elenwood..Glenwood,	Sept.	6, 8.
Susquehanna..Montrose,	Sept.	21, 22.
Wyoming..Wyoming,	Oct.	5, 7.

OHIO.

Blanchester..Clinton.	Sept.	27, 30.
Butler..Hamilton,	Oct.	4, 7.
Columbiana..New-Lisbon,	Sept.	21, 23.
Cuyahoga..Cleveland,	Sept.	27, 30.
Fayette..Washington,	Sept.	7, 9.
Fulton..Ottokee,	Sept.	21, 23.
Geauga..Burton,	Sept.	20, 22.
Geauga..Claridon,	Sept.	28, 30.
Greene..Xenia,	Sept.	7, 9.
Huron..Norwalk,	Sept.	28, 30.
Licking..Newark,	Oct.	5, 7.
Loraine..Elyria,	Oct.	4, 7.
Mahoning..Youngstown,	Oct.	4, 7.
Medina..Medina,	Oct.	3, 5.
Morrow..Mt. Gilead,	Oct.	5, 7.
Muskingum..Zanesville,	Sept.	6, 9.
Orwell..Ashtabula,	Sept.	27, 29.
Portage..Ravenna,	Sept.	21, 23.
Richland..Mansfield,	Sept.	7, 9.
Stark..Canton,	Sept.	28, 30.
Twinsburgh..Twinsburgh,	Sept.	7, 9.
Union..Marysville,	Oct.	5, 7.

INDIANA.

Fayette..Connersville,	Sept.	6, 9.
LaPorte..LaPorte,	Oct.	12, 14.

ILLINOIS.

Bureau..Princeton,	Sept.	13, 15.
Carroll..Mt. Carroll,	Sept.	28, 30.
Cumberland..Majority Point,	Sept. 29,	Oct. 1.
DeKalb..DeKalb,	Sept.	28, 30.
DuPage..Wheaton,	Sept.	26, 28.
DeWitt..Clinton,	Oct.	5, 8.
Ford..Paxton,	Sept.	20, 21.
Fulton..Lewiston,	Sept.	27, 29.
Hancock..Carthage,	Sept.	20, 23.
Kane..Geneva,	Sept.	7, 9.
Kankakee..Kankakee,	Sept.	7, 9.
Kendall..Bristol,	Sept.	20, 22.
Macoupin..Carlinville,	Oct.	11, 14.
Marion..Salem,	Sept.	5, 7.
McLean..Bloomington,	Sept.	26, 30.
Monroe..Waterloo,	Oct.	12 14.
Morgan..Jacksonville,	Sept.	6, 9.
Ogle..Oregon,	Sept.	28, 30.
Pike..Pittsfield,	Sept.	27, 29.
Randolph..Sparta,	Oct.	5, 7.
Schuyler..Rushville,	Sept.	28, 30.
St. Clair..Belleville,	Sept.	6, 9.
Union Central..Atlanta,	Sept.	6, 9.
Vermillion..Catlin.	Oct.	11, 14.
Warren..Monmouth,	Sept.	27, 29.
Washington..Nashville,	Oct.	5, 7.
Whiteside..Sterling,	Sept.	27, 30.

IOWA.

Clinton..Lyons,	Sept.	13, 16.
Dubuque..Dubuque,	Sept.	5, 9.
Floyd..Rockford,	Sept.	14, 15.
Muscatine..Muscatine,	Sept.	13, 13.
Scott..Davenport,	Sept.	19, 20.
Union..Wheatland,	Sept.	7, 9.
Van Buren..Keosauqua,	Sept.	15, 16.

LOWER CANADA.

Compton..Eaton Corner,	Sept.	22.
Missisquoi..Bedford,	Sept.	15.
Montcalm..St. Esprit,	Sept.	29.
Shefford..Waterloo,	Sept.	14.
St. Johns..St. Johns,	Sept.	22.

CREAM CHEESE.

An inquiry in the London Field, for a receipt for making cream cheese, was replied to as follows by three correspondents:

I see in the Field a request for a good receipt for a cream cheese. Those we make at home are much admired. We put a quart of cream into a clean jug, with half a teaspoonful of salt stirred in, and let it stand a day or two till thickish. Then we fold an ordinary glass cloth about six or eight times and sprinkle it with salt, then lay it in a sieve about 8 inches in diameter. The sides of the cloth should come up well over the sides. Then pour in the cream and sprinkle a little salt on it. Change the cloth as often as it becomes moist, and as the cheese dries press it with the cloth and sieve. In about a week or nine days it will be prime and fit to eat. The air alone suffices to turn the cream into cheese.

——Take about a half pint of cream, tie it up in a piece of thin muslin, and suspend it in a cool place. After five or six days take it out of the muslin and put it between two plates, with a small weight on the upper one. This will make it a good shape for the table, and also help to ripen the cheese, which will be fit to use in about eight days from the commencement of the making.

REDSTART—*Setophaga ruticilla.* Sw.

"*Male.*—Prevailing color, black. A central line on the breast, the abdomen and under tail coverts white; some feathers in the latter strongly tinged with dark brown. Bases of all the quills, except the inner and outer, and basal half of all the tail feathers, except the middle one, a patch on each side of the breast, and the axillary region orange red, of a vermillion shade on the breast. Female, with the black replaced by olive green above, by brownish white beneath; the head tidged with ash; a grayish white lore and ring round the eye. The red of the male replaced by yellow. Length, 5.25; wing, 2.50; tail, 2.45."—*B. N. Am,, p.* 298. BAIRD—or P. R. R. Reports, Vol. IX, p. 297.

Three species of the genus *Setophaga* are known to inhabit North America: *Setophaga ruticilla, S. picta,* and *S. minuta.* Of these three, the present species—*Setophaga ruticilla,* is much the best known.

This little bird, frequenting as it does, the depths of the forests and the borders of swamps, is but little known to others than the naturalist. To study his habits we will have to take an excursion to the woods—silent as the grave, except, perchance, when enlivened by the notes of some feathered songster. To the woods then let us go together—in imagination, if we cannot in reality.

Entering the forest, we hear, amongst the notes of other songsters that enliven its shades, one that at once strikes us as being peculiar. It resembles some what the words *we-ese, we-ese, we-ese,* repeated every few seconds. On looking around for the bird which uttered it, we perceive a small, brightly colored bird, flitting from branch to branch, now on the tops of the tallest oaks, and now upon the low branch of a dogwood—always perpetually in motion it would seem. As it reaches the top of some high tree, and is searching the branches for the small insects upon which it lives, suddenly we perceive it make an almost perpendicular descent to the ground, during which the sharp clicking of its bill can be distinctly heard. At each of these clicks of its bill it secures and swallows a small insect. It then alights upon some small branch of a dogwood or other low tree, and moves along it sideways—always searching for insects. Suddenly it shoots off in quite an unexpected direction, and that is the last we see of it.

The Redstart builds in some low tree or bush—sometimes in the fork of a small tree. The nest has somewhat the appearance of being suspended from the branches with which it is surrounded. It is composed of grapevine-bark, interspersed with fine grass. Sometimes dry moss is used. In this receptacle the female deposits five eggs, which are white, slightly tinged with bluish, and marked with ash grey and specks of blackish. The eggs vary considerably, and measure on an average, 7-10ths of an inch in length by 5-10ths of an inch in breadth.

The young males of the first year do not possess the brightness which the old birds exhibit; but in the second year they receive their full plumage. During the first year the males have the same plumage as the females, with the exception that they have a yellow band across the wings, which the female does not possess, and the color of the back is more tinged with brownish. They also have the lateral tail feathers yellow, the middle ones brownish, and the inside of the wings yellow.

J. P. NORRIS.

THE SPIDER AND THE BEE-MOTH.

From the days when Virgil sang of bees, the spider has been numbered among the enemies of the honey-bee.

In common with most bee-keepers, I waged a relentless warfare against it, until my attention was called to the large numbers of bee-moth often found suspended in its webs. From that time I looked upon it with a friendly eye, satisfied that while it feasted upon many an unfortunate bee, it was entitled to the same favorable regard with the insectivorous birds, which claim a share of the fruits their industry has helped to protect.

Within the last two years, however, I have found it to my interest to cultivate a still more friendly acquaintance with this detested insect; as I am now able by its help, *to preserve all my empty combs from the ravages of the bee-moth.* Let me tell your readers how I came to make so useful a discovery.

Two years ago I placed a small hive, containing an Italian queen from which I was raising other queens, upon an empty old box-hive, which being laid on its side, furnished a convenient stand for my nucleus. Putting some frames with the empty combs for a few days in the box hive, where they were protected from the sun and weather, and were convenient for replacing frames of brood removed from the nucleus, I noticed that a spider soon spun her web among them, and that in a few days she had caught several bee-moth. During the season I used this place as a receptacle for empty combs, and never saw any indication that the bee-moth had deposited eggs among them.

Last year I used the box in the same way, with similar results. Encouraged by this success, I left early last spring a number of empty combs in hives untenanted by bees, and find them, after repeated examinations, protected by spiders, and as free from the depredations of the larvæ of the bee-moth as though they had never been without the protection of the strongest colonies of bees!

Those who have kept pace with the progress of improved bee culture, have long ceased to regard the bee-moth as a very formidable enemy to the successful rearing of bees. Populous and well provisioned stocks suffer only trifling injuiries from it, while those which fall a prey to it, are usually queenless, or in such a condition as to be worthless without the aid of an experienced bee-keeper. The presence of the bee-moth is most to be deplored in the apiaries of the skillful, because of the great difficulty of protecting empty combs from the ravages of its offspring.

The use of movable comb hives enables the bee-keeper to turn to advantage every piece of good comb taken from colonies which are broken up, or to which any accident has happened, if such combs can be preserved from the only insect known to live upon wax.

But if a single female moth gain access to these combs after they are removed from the bees, or if only a few eggs are deposited in them before their removal, the worms, as soon as they hatch, begin to eat the combs, and so rapid is their increase in hot weather that in a short time such combs are rendered entirely worthless.

Both in Europe and this country many plans have been devised for the safe keeping of empty combs, but all of them require more time and skill than bee-keepers usually have at their disposal. Once committed, however, to the faithful guardianship of the spider, they may be considered secure, whether placed in empty hives, or in any special depository made easily accessible to these watchful insects.

If I found the spiders at all dilatory in taking possession, I should put their egg bags early in the season into the receptacles where I keep my empty combs, or I should capture and introduce some full grown specimens; but thus far any hive or box placed on the ground, and having sufficient opening, has been tenanted as early in the season as I could wish.

Oxford, Butler Co., Ohio. L. L. LANGSTROTH.

Farming in New-Hampshire, Sheep Husbandry, &c.

EDITORS CO. GENT.—I was much pleased in the perusal of Judge French's interesting letter in the Co. GENT. of July 21. His description of the farmers and their farming operations, I presume are those of the farmers of Chester and vicinity, and twenty years ago his remarks would have applied well to the farming towns in this section of the Granite State. But within the past fifteen years a great change has been effected in farm management in this section. Most of our farmers now keep sheep instead of cattle; wool-growing and sheep-rearing is found to be much more profitable than that of raising cattle and dairying.

The Judge gives us an inventory of the "goods and chattels" of what he "calls a farmer" in his vicinity —"he has one or two hundred acres of land, most of it woodland and rough pasture. He keeps perhaps twenty head of cattle, one horse, "*a few sheep*," three or four swine, and some poultry." With these fixings the Chester farmers "live, and live well and happily, and independently. They do not live on the interest of their money, for they have none."

The farmers in this section of the State have their one or two hundred acres of land—much of it woodland and rough pasture. They keep teams sufficient to do their farm-work, and cows enough to make their own butter, and perhaps cheese. The balance of stock necessary to consume their hay and other fodder, is made up of fine-wooled sheep. They calculate that eight Merino sheep can be kept as easily as a cow on the farm, and with far less labor. A good ewe should yield four and a half pounds of wool, worth (this year) ninety cents a pound, which for the eight gives $32.40; and the eight should raise six lambs, worth in the fall $3 per head,—in all, $18,—which with the wool gives $50.40. The foregoing estimates I am aware look large, but not larger than present prices justify. I know many flock-masters that will realize much larger amounts for both their fleeces and lambs.

But supposing wool and lambs will only command half the prices above named, many intelligent shrewd farmers think sheep would still afford them a greater profit than the keeping of neat stock. Within the past fifteen years there has been great fluctuations in the prices of sheep, lambs, and wool, and during that period, those flock-masters who have "pursued the even tenor of their way," notwithstanding these "ups and downs" in the price of wool, &c., have succeeded in making money much better than those engaged in other branches of farming.

On Monday, Aug. 1st, I visited the farmers in a district of this town—thirteen farms. One farmer kept no sheep, two others kept about half a dozen cossets each; the other ten had flocks ranging from about 50 to over 200. These farmers in the aggregate sheared about 3,700 lbs. of washed wool, averaging a fraction less than five pounds per fleece. Most of the wool was sold at eighty cents per pound. These farmers sold their wool too early; but as it was, there were about three thousand dollars distribued among these few farmers, besides the lambs raised. I regret that I had not obtained the number of lambs; probably the number saved was much less than in previous years, but the value of the lambs added to that of the wool, amounts to a pretty little sum to distribute among a few farmers in this district; but then we have many more districts in town where large numbers of sheep are kept, and the owners thereof "live well and happily, and independently," and have money at interest; and we think if the Chester farmers would dispose of a portion of their cattle and keep sheep instead, they too might "have money at interest."

It has been said by some persons, that ultimately the flock-masters of the great West will ruin the wool-growing business of the Eastern States. The higher price of land here, and the extra cost of wintering our sheep, will eventually make the keeping of them here a losing business. But fortunately this is a world of compensation. No one section of our country has all the advantages within its limits; notwithstanding our long, cold winters, we shall continue to keep sheep for their meat, wool, and lambs, at least till this terrible war comes to an end, and probably for a long time after. L. BARTLETT. *Warner, New-Hampshire.*

Experiments with Muck, Muck Composts, &c.

MESSRS. EDITORS—Having in a previous communication presented for the consideration of your readers some details as to the varieties of muck, and the uses and advantages of muck and muck composts, from a lecture by Prof. Kedzie, of the Agricultural College of Michigan, I proceed now to give an abstract of some experiments with these substances, and the results thereof, from details given in the same lecture.

One set of these experiments was made on *meadow* land last spring; but from an interference with the projected plan, upon grounds very poorly fitted for experimenting. The only grass land which could be used, after a blundering pre-occupation of that originally proposed, was a piece of strong clay, which had been in wheat the year before, and was rather poorly seeded with clover, timothy and June grass. Two acres as nearly alike as possible were selected, and accurately divided into parcels of half an acre each. In the first week of May 20, loads of *powdery* muck were drawn on to Nos. 1 and 2, from the muck bed near the barn (of course without any seasoning) and spread over the surface. On May 9th, salt at the rate of 2 bushels per acre was sown on Nos. 2 and 3. No. 4 was retained as a standard by which to measure what the soil would produce without any top dressing.

Wherever piles of muck had been left a few days before being spread, and wherever it was spread thickest, the grass, and the clover especially, exhibited a ranker growth.

The grass was cut and cured in the first week of July, and being carefully weighed, on a Fairbank's scale, it was found that

No. 1 gave	1,010 lbs.,	or a nett gain from	Muck of.....	208 lbs.
2	do.	981 lbs.,	do.	do.	Muck and salt,. 177 lbs.
3	do.	940 lbs.,	do.	do.	Salt, ... 138 lbs.
4	do.	802 lbs.			

Before giving the results of experiments with *hoed crops*, several details are given as to the weather of the summer, showing that the average temperature was 3° below the average of the preceding five years; that the thermometer (self-registering) fell below the freezing point on seven nights between July 15th and Sept. 25th; and that the fall of rain for six months, April

to September, was only 15.98 inches, while the average of five previous years was 18.60 inches for the same months. In a word, the growing season of 1863 was both cold and dry, while on an average the nights of Sept. were less than 10° above the freezing point!

Looking at such a record of the weather, the doubt would naturally arise whether crops could be ripened at all. Certainly it cannot appear strange that corn fared so badly as it did.

The experiments in hoed crops were performed by members of the junior class, under the superintendence of Prof. K. At the close of the experiment each student made a written report, and Prof. K. consolidated the whole into one general report, which he made to the Faculty, to be recorded in a college journal of experiments.

The compost used in making these experiments was made of three parts *powdery* muck and one part night-soil, thoroughly mixed together by two shovelings, a week apart after the first mixture, which was made three weeks before being used.

The soil selected was a gravelly loam, which had been planted to potatoes the year before, without any manure. It was plowed about May 20th, 5 inches deep, and marked off in rows 3½ feet apart each way. It received no manure except the substances applied either in the hill or as a top-dressing, and hereafter specified.

EXPERIMENTS WITH CORN.—The seed used was a yellow dent, soaked three days in simple water, and throwing out sprouts half an inch long. Four kernels were put in each hill and covered rather under than over one inch deep. The quantity of the compost used was half a shovelful in each hill in the rows devoted to compost. Other rows had a tablespoonful of salt in each hill, and others again a tablespoonful of plaster.

The corn was planted May 26, and at the first hoeing, June 17th, the corn on the rows which had been manured with compost was 2 to 4 inches higher than that on the rows which had had nothing, or only salt or plaster; and at the second hoeing, July 9th, the the corn on the former was 12 to 20 inches higher than any other. On Aug. 1st, these rows were in full silk and blossom, while the others, without compost, were not in silk and blossom until the 10th of Aug., showing a gain of ten days' growth in favor of the compost.

The results at husking time may be thus stated: On two rows left without any manurial application, the crop was at the rate of 63½ bushels (ears) per acre, and as, on the rows which had the compost, the yield was at the rate of 101, 98, 89, 77, and 80 bushels per acre, the gain of course was, neglecting fractions, 38, 35, 26, 14, and 17 bushels, ears, per acre. On two of the rows which had plaster in the hill there appears to have been a small gain, above the unmanured rows, of 8 bushels of ears; while on those which had salt in the hill the yield fell below that on these test rows.

The small influence from plaster, whether in the hill or as a top-dressing, is attributed by Prof. K. to the probability that the large quantity of sulphate of lime already in the soil may render the farther application of this salt useless. The ruinous effects of salt in the hill were expected.

EXPERIMENTS WITH POTATOES.—Ten rows of potatoes were planted beside the corn, one of which was left without any application, in order to serve as a test of the natural productiveness of the soil, and as a standard for judging of the effects of the muck compost. A full shovelful of this was applied to each hill in four of the rows, and salt and plaster used for the others, as in the case of the corn. The same superior luxuriance of growth from the use of the compost was to be observed in the potatoes as in the corn, and a similar gain at harvesting. Throwing out one of the four rows to which the compost was applied, on account of its being ruined by an addition of salt, it was found that the compost gave an increase of yield above that of unmanured soil, of 44 per cent. The gain in the case of the corn was also, throwing out one row with compost, but injured by salt, 44 per cent.

These experiments may serve to induce farmers to make more use of their muck-beds, and of that richest of all manure which is so generally allowed to go to waste, or worse still, to pollute the atmosphere. A gain of 44 per cent. at the small expense of preparing and applying the compost described, will surely pay largely, and is, at all events, worthy of a trial.

A. R. A.

BLACKBERRY-ROOT CORDIAL.

Preparation.—Take of blackberry-root bark, pounded fine, two ounces—pure ginger root, fine, one half ounce—place them in a covered vessel, and pour upon them one half pint of whiskey and the same of water—macerate fourteen days. Then strain, adding water so as to make one pint of clear liquor. Then add four ounces of refined sugar, and dissolve.

Properties and Use.—The physiological effects of this cordial, in moderate doses, are those of a tonic, stimulant, and a stringent, invigorating the vital energies generally, peculiarly fitting it to the treatment of a certain class of diseases. Such are cases of chronic diarrhœa and dysentery, general debility, with impaired digestive functions.

We can safely testify that we have not unfrequently seen confirmed cases of chronic diarrhœa and dysentery yield to this cordial, after other more potent remedies (so called,) had failed, such as calomel, blue pill, sugar of lead, &c.

The dose is one tablespoonful, repeated according to circumstances, or from three to six times daily. The time of digging the root is immaterial.

Compound Peach-Bark Cordial.

Take peach bark from the young sprouts, three ounces—blackberry-root bark two ounces—redberry bark one ounce—ginger-root one half ounce—place the whole in a covered vessel—pour upon them one and a half pints of boiling water—let it stand and steep two hours—then strain, and add whisky one-half pint, refined sugar one-half pound. Use and dose the same as the blackberry-root cordial.

Amesbury, Mass. A. F. PATTEE, M. D.

BREAD—MILK vs. WATER.

MESSRS. EDITORS—In your article "Domestic Economy," of July 14, it is stated that "all breads are better mixed with milk." Allow me to say this is a very great mistake. Bread, raised with yeast only and mixed with water, is far better than that mixed with milk. Made up with the latter, the bread, it is true, is very sweet and good if used immediately; but no better even then than that made with water; but after 24 hours the latter is far superior. I know a great many can't get it out of their heads that milk makes the best bread—but I repeat, it is a great mistake. Let disbelievers try it, particularly on the score of a little age, or after 24 hours only. Use no shortning—using milk is equivalent to this, and that is the principal reason why pure water bread excels. I. M. M. *Greenfield Hill, Aug. 7.*

THE CULTIVATOR.

ALBANY, N. Y., SEPTEMBER, 1864.

Mediterranean Wheat.—An advertisement will be found in another column of Venetian Wheat just imported for seed by THOS. RICHARDSON, Esq., of New-York. Mr. R. informs us that the importation was made to supply seed for his own farm near Burlington, N. J., "having found by a former importation that it yielded nearly a double crop as compared with grain that had been grown in this country for several years." He says: "We got 40 bushels to the acre from the first season's sowing, on subsoiled and thorough drained land. The crop has since fallen to about 24 bushels, the yield of the present crop. Others who had the same seed had the same experience according to the cultivation. As a large exporter of wheat I would be glad to see it introduced into Illinois, where they produce the most winter wheat that comes to this market—the quality poor, full of cheat and foul seeds, for which reasons it is well known in the Liverpool market, where it does not command within 6d. or more per cental of prime Michigan, Pennsylvania, Delaware or Jersey, all of which States grow Mediterranean wheat to perfection. Ohio has also degenerated and wants a renewal of seed."

Mr. RICHARDSON sends us a sample of this wheat which is very handsome and perfect, and we trust it will at once attract the attention of purchasers, who had better apply promptly to be certain of securing a supply.

Mr. R. mentions that the demand for Alderney cattle has been so great that he has concluded to make another importation of them to supply it—notwithstanding the heavy cost at present arising from the difference of exchange.

Small Fruits—While on a visit recently at the residence of my friend T. H. BURGESS, of New Paltz Landing, he showed me the grounds of his neighbor O. J. TILLSON, (who unfortunately was absent,) a large portion of which is devoted to the culture of small fruits. These grounds show the management of a skillful hand. There are about two acres occupied by the Hudson River Antwerp raspberry. The crop this season, in consequence of the severe drought, was only about one-third the usual amount, yet the increased price in market netted as much as in former years—namely, some $400 per acre above expenses. Like the other plantations in this region, the stools are four feet apart each way, each being tied to a single stake. The new canes for next year's crop had already grown four or five feet, and, extending across the rows, filled the spaces between them with foliage. The land is kept well cultivated and in good condition; the soil is light and gravelly, and I was informed was not quite so good for this purpose as that in the neighborhood of Milton, some twelve miles below, so widely famed for its Antwerp plantations. The Milton soil is formed largely of the disintegration of clay-slate, thus possessing *something* of a gravelly texture with something of the strength of heavy soils.

The strawberry plantations on this place have proved quite profitable for several years, and are attended with about the same profit per acre as the raspberry, with much less care and expense in culture.

The Wilson is chiefly cultivated; from a limited experiment the proprietor has become convinced that the most profitable mode of culture is keeping the runners entirely cut off, and each separate plant or "hill" by itself—the rows being about three feet apart, and the plants fifteen inches in the row. Another year will be required to test the success of this larger experiment. At present the plantation presents a fine appearance. The runners are cut off once a week with a pair of sheep-shears, an active hand going over two acres in a day. J.

Eighth Census of the United States.—Hon. J. C. G. KENNEDY, Superintendent of the Census, will please accept our thanks for the first volume of his Report, *in extenso*, comprising the Population returns. It is a handsome quarto of over 800 pages, including an introduction of about 100—which, as the book arrives just as we go to press, we have not yet had time to read. We shall do so at an early opportunity, and if it proves as timely and well-judged as all similar comments on the statistics of 1860, issued from the same bureau, so far as we have yet seen them, it will form a most important accompaniment to the tables of figures which follow. The second volume is to be devoted to Agriculture, which we shall look for with especial interest—the third to Manufactures, and the fourth to Mortality. We doubt if the whole subject, which involves immense responsibility and labor, could have been committed to better hands than those of Mr. K.

State Fair Discussions.—The subjects appointed for discussion during the coming exhibition of the State Agricultural Society, are as follows:

First evening, "Steaming and Cutting Food." Geo. A. Moore, Esq., of Buffalo, to open discussion.

Second evening, "Fine Wool Sheep. Should the Society recognize any distinctions of breed among fine wool or Merino sheep, as at present bred in the United States, or should all be classified together, and regarded from identity of origin or subsequent intermixture of blood, as now belonging to one and the same breed?" Hon. Henry S. Randall, LL.D., to open discussion.

Third evening, "Is it best for Dairymen to raise their Stock, or purchase?" Hon L. F. Allen to open discussion.

Ex-President A. B. Conger will preside at these meetings, and at their close will present a summary of the points arrived at in the discussions.

New England Agricultural Society.—The advertisement of the coming Exhibition of this Society should attract the attention of readers in New York as well as in New England. As we have heretofore stated the prize list is a very liberal one, and the railroads of New England, with commendable liberality, have opened their doors, and stock for this exhibition can now be transported free, both ways, from Portland to Albany, and from St. Albans to the city of New York.

Notice of the intention to enter live stock, and all contributions, should be sent to J. N. Bagg, Corresponding Secretary, Springfield, Mass., on or before September 1st, that proper arrangements may be made for their accommodation.

Pennsylvania.—We have received the Premium List of the coming Pennsylvania State Fair at Easton, Sept. 27—30. It is very liberal both in the amounts offered and in the number of classes, and should attract extended competition. We trust that the result may be a better turn-out of the breeders and farmers of this leading agricultural State than has ever before been elicited. President, THOMAS P. KNOX, Norristown; Secretary, A. B. Longaker, Norristown, to whom communications should be addressed.

The Country Gentleman—one of the best agricultural journals in the country—has closed its twenty-third semi-annual volume. It is a journal that should be in the hands of every farmer.—*New-York W*

The New-England Farmer.—This sterling Agricultural Journal, which for many years past has been one of the most widely circulated of our contemporaries, is forced to suspend publication by the present cost of paper and labor. We refer to the fact with great regret, for under the management, in its agricultural department, of Lieut.-Gov. BROWN, and, in the miscellaneous and business departments, of Messrs. Nourse, Eaton & Tolman, it has been a model newspaper of its kind. Its subscribers had received more than a fair equivalent for their money, at the time of its discontinuance, and should brighter times lead to its re-establishment, we trust that a welcome may await it, as warm as was the favor it enjoyed in its palmiest days.

—The suspension, in this way, of an old and well-established Journal cannot be passed by without one remark of general application. Those who are disposed to complain—if any such there are—of the recent general advance in subscription prices, may judge how necessary such a course has been, from the numerous suspensions and stoppages which have already occurred. It would scarcely be a fair equivalent for old newspapers rates, *at least to double them*, under the war prices now ruling. Instead of this, the advance so far made has been comparatively small. It is therefore very likely that a farther advance may be necessary before the 1st of January, but all publishers will *if possible* avoid it.

Reclaiming Bogs.—While on a recent visit at the residence of D. S. HEATON, of Ulster County, he showed me a bog of some 200 acres under the process of reclaiming. In its wild state it was covered thinly with small bushes and with a very dense growth of coarse weeds. Open and covered drains have been run through it about ten rods apart to carry off the surplus water. The covered drains are cut about four feet wide at the bottom, and stones being abundant on the adjacent land, the ditches are filled with these—the interstices forming sufficient space for the escape of large quantities of water. The surface of the land is then cleared of large bushes and weeds by the bog-hoe, and the heaps thus formed, burned when they become dry. The land is now fit for seeding to timothy and red-top, and these grasses yield a crop of two to three tons of hay per acre. The expense of reclaiming is from thirty to forty dollars per acre—which would be entirely paid such a year as the present, by a single crop of hay. No application to these meadows appears to be so efficient as stable manure, a thin dressing being sufficient to procure a large increase of growth.

New Paltz Landing in the neighborhood is famed for its large export of hay, several thousand tons being annually shipped there. Farmers generally are supplied with hay presses, and all the hay sold is carried off in bales, being rendered nearly as compact and heavy for its bulk in this way as cord-wood. J.

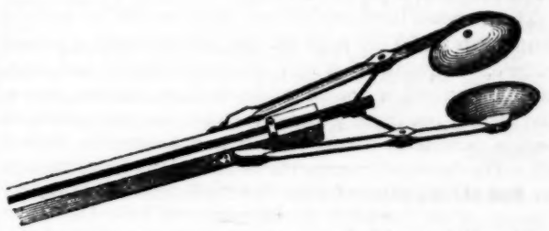
Fine Spring Wheat.—We brought away from JOHN JOHNSTON'S a few heads of a spring wheat, the seed of which was sent him last season from Canada West. It is a very plump, beautiful berry, and was raised by a Mr. HEWITT on the shores of Lake Simcoe, C. W., with great care, from a few seed which took a prize at Hamilton, a number of years ago. Mr. H. had cultivated it with much attention from year to year, and considers it well adapted for heavy lands. We learned that out of his last crop he was able to sell 80 bushels for seed at $3, while ordinary spring wheat could be had at 80 cts.

Transfer of the Thorndale Flock.—It will be seen from an advertisement this week, that GEO. H. BROWN, Esq., of Millbrook, Washington Hollow, has just purchased the entire flock of South-Down sheep belonging to SAMUEL THORNE, Esq., Thorndale. This flock has been brought to its present position by long and careful breeding from some of the best animals ever brought into the country, and it is not too much to say that it is at least without a superior. We are glad to know that Mr. BROWN intends to follow in the footsteps of his predecessor, and have no doubt that he will fully maintain the reputation of the breed. As he has been engaged for some time in breeding South-Downs, having a considerable flock of his own, based mainly upon purchases at Thorndale, he is now enabled to spare from the two flocks combined, a considerable number, both of males and females, of different ages.

We also learn that Mr. BROWN has purchased from Mr. THORNE the yearling Short-Horn bull "Seventh Duke of Thorndale," and has sold his yearling bull "Dreadnaught," for a good price, to Mr. MORRIS KETCHUM of Norwalk, Conn.

Fruit Picker.—I forward by express a *fruit picker* of my own invention and make. I have used them for 10 years, of different lengths, from 8 to 16 feet. They are designed to gather fruit for the table, not much for market. Little children can gather the choice ripe fruit from the high limbs, and lay them in their baskets without bruising in the least degree. Place the basket in an open space the length of the picker from you; then pick and lay in, and your basket is soon full. I send a short one as a model, for fear a long one would get broken in transportation. Please accept it as a token of the high estimation in which I hold the COUNTRY GENTLEMAN. The picker is not patented and will not be. The public are welcome to it.

Alton, Ill. ELIAS HIBBARD.



We present above an engraving of this Fruit Picker, which is a very handy contrivance for reaching the upper branches—particularly when they are not easily accessible from a ladder. Its operation will be plainly seen from the figure—the handle containing a slide which, by pulling it down, closes the brass cups at the top upon the fruit, which is thus separated from the stem and safely landed in the basket without bruising, and as delicately as if grasped by the hand.

Sale of Stock.—Mr. JAS. N. BROWN of Sangamon county, Ill., widely known as a breeder, gives notice that he will sell, Aug. 25th and 26th, 30 or 40 superior Short-Horn cattle, consisting of cows, heifers, and young bulls; also South-Down Sheep and Berkshire hogs, from the importation of the Illinois Importing Association of 1857. Also a number of valuable brood mares, colts and fillies, of trotting stock.

Sheep Shearing.—The following statement from Messrs. R. & R. U. BROWN of Utica, Dane Co., Wis., was received last month, but accidentally overlooked until this time:

"MESSRS. LUTHER TUCKER & SON—Below you will find a statement of the shearing of our flock of sheep, which you may publish in the COUNTRY GENTLEMAN if you think it worthy. I would say that they were well washed in running water, and sheared a few days earlier than last year. From 383 sheep we clipped 2,465½ lbs. of wool, averaging 6 lbs. 7 oz. per head; 82 yearlings averaged a trifle over 7 pounds each; a 3 year old ewe sheared 14¼ pounds; weight of carcass, 85 pounds; a 3 year old buck sheared 15½ pounds."

Exports of Produce.—The following statement of the exports from New-York of leading articles of produce for the first seven months of the year, anticipates by a few days the close of the month of July, as it is kept in even weeks, but covers the same period in each of the years referred to. We are indebted for it as usual to the New-York Journal of Commerce:

FIRST SEVEN MONTHS.	1862.	1863.	1864.
Beeswax, lbs.,	89,540	129,468	319,043
Breadstuffs:			
Wheat Flour, bbls.,	1,780,733	1,141,220	1,196,174
Rye Flour, bbls.,	5,581	4,079	2,123
Corn Meal, bbls.,	97,720	79,894	70,682
Wheat, bush.,	9,906,370	8,835,633	8,673,399
Rye, bush.,	938,457	358,537	405
Oats, bush.,	23,433	105,785	25,398
Barley, bush.,	22,128	52,189	150
Peas, bush.,	86,079	67,287	142,959
Corn, bush.,	7,222,475	6,441,593	319,070
Cotton, bales,	6,951	9,579	23,695
Hay, bales,	21,408	14,259	20,861
Hops, bales,	4,827	18,617	16,889
Oils—Lard, galls.,	225,722	754,788	115,767
Linseed, galls.	24,222	10,915	26,071
Provisions:			
Pork, bbls.,	121,414	116,673	90,811
Beef, bbls.,	18,091	25,717	23,764
Beef, tcs.,	33,753	33,658	39,704
Cut Meats, lbs.,	114,628,174	159,029,563	82,071,929
Butter, lbs.,	10,803,847	7,785,694	6,670,317
Cheese, lbs.,	14,287,010	16,029,115	21,272,581
Lard, lbs.,	84,678,681	87,434,966	39,382,623
Tallow, lbs.,	22,662,616	25,786,581	22,655,447
Tobacco, crude, pkgs.,	58,547	48,533	66,845
do. manuf., lbs.,	435,933	1,678,019	2,586,490

"The shipments for the last two weeks have been unusually large in value, but this is partly owing to the enhanced prices of produce. The tables above given possess unusual value in this respect, since they are made up from quantities, and are not changed by the fluctuations in a paper currency."

The increase in cheese is very large, as will be noticed—upwards of 30 per cent on the corresponding period in 1863. Exports of wheat are nearly up to last year, but flour shows a considerable decline. Other grains, and animal products generally—with the exception of beef in barrels or tierces, show a considerable falling off. The increase in exports of cotton looks as though we had at last reached a part of the Southern stock.

The Wheat Midge.—About Syracuse, as we learn from a letter under date of 2d inst., from Hon. GEO. GEDDES, the wheat crop has been secured, and "is the best we have had in some years, judging by the straw, &c. As none has been threshed yet to my knowledge, we cannot say how the straw will yield, but I think it safe to congratulate our farmers on the crop."

The months of June and July, in 1863, Mr. G. goes on to remark, were very wet; the present year they were dry beyond recent precedent. In *neither season* was there any loss from the wheat midge. Dr. FITCH has suggested the theory that wet weather, particularly during the latter half of June, is very favorable for the devastation of this insect, and that it may be expected when such weather occurs at that time; but that dry weather, then, compels it apparently to withdraw, in which case the crop may be considered safe: "When the uplands, the plowed fields, are parched with drouth, the midge cannot abide in them; it must go to the lowlands, along the margins of streams, where it must remain so long as the drouth continues." The present year certainly affords a fair test, at least of the latter half of the theory—and this part of it is not contraverted in Mr. Geddes' neighborhood, although in 1863, the rains and damp of June and July, and the absence of the midge as well, did not agree with it. Mr. Geddes says he is told the midge has done some damage about Geneva, and JOHN JOHNSTON in the letter we published last week, states that all his "latest wheat" was more damaged by it than any he ever raised.

Mr. HARRIS refers to this subject in the Genesee Farmer for August. "I have a field of wheat this year," he says, "some portions of which escaped the midge altogether, while other portions are more or less injured, simply because, as I supposed, the land, being wet in spring, the crop was late. I question whether the atmosphere is any less dry and warm in one part of the field than it is in the other. Certainly the whole field was dry enough the latter part of June."

We fancy, as indeed Mr. Harris appears to, that the amount of moisture in the atmosphere has less to do with the ravages of the midge, than Dr. FITCH was led to infer from his observations on the subject in 1860 and 1861. Mr. H. says, in speaking of JOHN JOHNSTON'S experience this year:—

What he says in regard to the effect of manure on wheat is very interesting. He applied manure quite liberally on part of his wheat; another part received a lighter coat, and one acre was left without manure at all. The straw on the whole was abundant—rather too much on that best manured; *but the midge has done comparatively little damage on this portion, a great deal more damage on that less manured, and far more on that where no manure was used.* This is just what I have always contended. If we could sufficiently enrich our land with rich manure, (*not* rotted straw,) and if it were well drained and cultivated, and sown at the right season, we should have no reason to apprehend much damage from the midge. The reasons Mr. Johnston assigns for the effects above described are these: "That heaviest manured stood the winter best, came earlier forward in spring, and came in ear earlier. That manured less was a week later, and the one acre without manure was quite behind. I can have Soules wheat early enough if I only had plenty of manure of the right kind. I have contracted for eight tuns of oil-cake meal to feed this winter at $50 per tun. Were it not to make rich manure, I should not have done it."

An Excellent Idea.—The Boston Advertiser announces that tin labels have been fastened to some of the principal trees on the Common in that city, indicating the popular and the scientific names thereof. It adds: "We are not aware to whose good sense we are indebted for the idea, which is a good one, and will tend, let us hope, to induce more minute attention to some of the most magnificent trees that grow. We venture to assert, that not one in ten of our citizens can tell the difference between an English and an American elm, or between a white and a black ash, or even between the tulip tree and the linden. They now have an opportunity to study arboriculture to some slight extent, as they promenade in this charming locality."

This example should be imitated wherever there are public grounds containing trees of any rarity.

Cabbage Maggots.—A contemporary recommends the application of an ounce of corrosive sublimate dissolved in four gallons of water, as a watering to cabbages and cauliflowers, to prevent the ravages of the maggots. This remedy should be well tried before much recommended, as many kinds of larvæ are entirely unaffected by sharp remedies. We have heard a thin sprinkling of salt advised for repelling worms from the soil—at the same time we have seen the same worms revelling in a bed of pure salt without apparent inconvenience. It was found, some years ago, that the bots would live a long time in nitric acid, and that a saturated solution of corrosive sublimate had for a time little effect upon them. The remedy frequently destroys the plant sooner than it does the insect. Careful experiment should therefore be first resorted to.

Grape and Wine Show.—An exhibition of grapes and wine will be held at Cleveland, Ohio, Sept. 27–30, at which liberal premiums are offered. One of the same kind was very successfully held last year, with such general satisfaction that the experiment is now to be repeated. Those interested can address Mr. F. R. ELLIOTT, who has the matter in charge.

Inquiries and Answers.

Concrete Walls.—I am intending to build concrete walls under a portion of my fence. Will some of your correspondents furnish me with directions through CULTIVATOR for mixing the same? T. J. C. *Warren Co., Ohio.* [Procure the very best water-lime which has been proved on trial, and mix it dry with three times its bulk of very sharp and clean sand. Add and mix water as it is needed for use, as it sets quickly. Some kinds of water-lime do best with less sand, say about two parts to one of lime.]

Raspberries.—Which is the best raspberry for family use, Brinkle's Orange, Fastolf, Franconia, or Red Antwerp? M. P. NIMES. *Oswego Co., N. Y.* [Brinkle's Orange is the general favorite for this purpose, being very productive and fine flavored. Its softness, which prevents its conveyance to distant maskets, is no objection for family use. The Fastolf and Franconia are both excellent sorts, and should not be omitted. The Red Antwep succeeds only in certain localities.]

Barley Dealers, &c.—*T. L. H., Kettleby, C. W.* Either John Tweddle, Thomas McCredie, or W. H. Taylor, of this city, may be addressed as to any barley you have to dispose of. There are other leading firms, but the three we have named will probably require upwards of 600,000 bushels this season, and it is perhaps unnecessary to mention any others. Waterman & Buell are large commission dealers in grain of every kind.

Hedge.—I wish to set out in the spring or this fall a hedge fence, and ask your advice what to set out. I suppose I cannot get Osage even if it is considered the best. I want the hedge as much for ornament as anything else; it is to be set on the brow of a high hill facing the Ohio river, and in times of drouth becomes very dry. W. B. C. *Ripley, O.* [No deciduous hedge should ever be planted where it cannot be well cultivated for a few years. Probably the Honey Locust or the Buck Thorn would succeed as well as common hedge plants, but the Buck Thorn must have a rich, well cultivated soil away from shade, or its growth will be feeble. We are inclined to think that the Norway Spruce may answer best for our correspondent, as it grows with less care after once started, but requires cutting back to keep it stiff and within bounds.]

Barometers.—*J. A.* No barometer foretells "for certain, the kind of weather in store." Even with the most experienced, the variations of the barometer are always taken in connection with other "signs;" and, with practice in judging of the indications thus afforded, great skill in weather-prophesy may be attained. Thus the barometer becomes a very important instrument for the farmer, although, without the care and frequent observations necessary to acquire an understanding of its movements, some have given it up as a failure. We are not aware that sailors use anything different from the ordinary mercurial barometer, which if well made, is probably the best; the "aneroid barometer," however, is smaller, cheaper, and more portable, and is spoken of with good satisfaction. There are also many kinds of "weather-glasses" and other so-called "barometers;" but we have never seen any of them which told anything *more* than the mercurial or aneroid instrument, while most of them are certainly much less trustworthy, and many are absolutely worthless.

Farm Book-Keeping.—*F. C. E.* We have published in the back volumes of this paper several such statements as to the modes of farm book-keeping, with examples, as you inquire for. The last which we remember, and which is very good and complete of its kind, was that of J. B. WALKER of New-Hampshire, which you will find on pages 138 and 154, vol. XIX, CO. GENT. Another article will be found on page 299 of the same vol., or on page 180 CULTIVATOR for 1862, which may be consulted to advantage. At the same time, we shall be pleased to receive as you suggest, other systems and examples from readers who have tested them.

South Down Bucks.—What ought a well fed, well made South-Down buck, to weigh at 18 months or 2 years old? Do you know of any shipments of "Oxford Downs," from any eastern breeder, as far West as Illinois? H. E. *Iowa.* [We can hardly say what would be a fair weight for a South-Down ram at 18 months or two years. Wethers of this breed will *dress seventy-five to one hundred pounds* at 18 mos. We know of no Oxford-Downs carried into the Western States.]

Cheese Factories. — *G. Sheldon, New Marlboro Mass.* You will find a description of the process in our ANNUAL REGISTER for 1864, (price 25 cents,) but the most satisfactory way will be for you to visit one of these establishments personally, inspect its operations, and inquire into the capital requisite and other preliminaries for getting under way. There are a number of Cheese Factories now in operation in Worcester county and elsewhere in your State.

Toe-Nippers for Sheep.—In answer to a personal inquiry we lately suggested the use for this purpose of the ordinary Pruning Shears, with spring between the handles and short-curved blades, although not aware that they had been previously tried. JAS. REMINGTON of Ohio, writes to the Rural New-Yorker that he has used such shears for some time, and considers them "superior to any other instrument for trimming sheeps' feet." They are to be found at nearly every hardware store.

Dwarf Pears.—Do dwarf pear trees at 2 or 3 years of age grow faster than standards of the same age? I have both kinds in my young orchard, planted by a nurseryman during my absence in the army. The catalogue and plan have been lost, and I am at a loss to know how to trim the trees. The largest and most thrifty trees are growing in the dwarf form, but I should think the standards ought to grow the fastest. By giving the desired information in CO. GENT., you will oblige yours truly, J. C. H. *Greenwood, Sussex Co., Del.* [There are soils in many places where the standard does not grow well, but where the dwarf succeeds finely, especially when quite young. In such places the growth of the dwarf will be the most rapid for some years, although the standard may become ultimately much the largest. Our correspondent will find ample directions for pruning the dwarf pear on page 43, vol. III of Rural Affairs.]

Mortar Floor—Cattle Ties.—I want to ask of you or your readers, if a stable floor in a basement, can be successfully made of lime, gravel and sand, four to six inches deep? Also what distance should be left between the drop and hitching post for cows, where chains are used? CONSTANT READER. [The only mortar or cement floor that can be used for a stable, is made of water-lime. When it becomes hard it will remain a long time, if not subjected to freezing when wet. The very best hydraulic cement, however, with perfectly clean, sharp, white sand, will make a cement that will withstand even the effects of moisture and the hardest freezing. We do not know the best length for the chains of cattle-ties. Will some one who has tried them differently, please report the result?]

Raspberries.—Are the "Improved American Black Cap" raspberries the rame as "Doolittle Black Cap?" Will they bear heavy manuring without running altogether to vine? Will they do as well if set out in the fall as in the spring? I have a bed of Allen raspberries a year old, which bear no fruit, evidently needing another sort to fertilize them. Which is cheaper, to plow up every other row and plant fertilizers, or to plow up the whole and set out a new bed? How should raspberries be treated to get the most plants from them? G. L. *New-Brunswick, N. J.* [The Doolittle raspberry is often called the Improved Black Cap, being a prolific variety of the common Black Cap, which grows wild, but differing a little from it in appearance. It will bear good manuring, varying, of course, with the natural fertility, depth of soil, &c. They usually succeed well set out autumn or spring, but the latter is safest in severe climates. The Allen raspberry never succeeds unless kept thoroughly thinned out, and in many localities not even with this care. It may do well with the treatment our correspondent proposes, and he can try it, but we should prefer burying the whole deeply under and planting other sorts. To increase the plants, the easiest way is to cut back in the spring, and let them sprout up. The Doolittle, however, is to be increased by layering the tips of the shoots. On a large scale the best way is to make cuttings of the roots.]

Corn Husker.—Will you please inform me of some good patent corn husking machine, with address of the patentee or manufacturer, by letter or through your paper? T. C. T. *Catskill.* [We know of no machine which has proved really successful as a Corn-Husker; if our readers do, we will publish the information desired with pleasure.]

Grass on Peaty Land.—I want to ascertain the best and most feasible way to *bring back* the cultivated grasses, timothy and red top, on a peaty bog meadow that was some 10 or 12 years since reclaimed by being covered with sandy gravel &c. It has grown immense crops of those grasses, but is now fast returning to the growth of the natural and bog meadow wild grasses. Will some of your patrons or correspondents

who may have had experience with such lands, impart the information through your valuable journal. S. *Norfolk county, Mass.*

Honey Locust Hedges.—I notice that Mr. THOMAS has seen some very fine hedge at Rochester of Honey Locust. Will he do me the favor to give the *modus operandi*, through the Co. GENT., from the sowing of the seed up to the mature hedge. We nearly despair of getting any more Osage Orange from Texas. Honey Locust grows abundantly here in the bottoms. H. E. *Iowa.* [The well-ripened seed grows freely when planted in the spring about an inch deep. The young plants may be set out in the hedge row when one or two years old—or, if the seed is very abundant, they may be planted thickly in the hedge-row and the plants afterwards thinned to the proper distance, which is about eight inches apart. Cultivate a strip of land on each side of the hedge at least four or five feet wide, or eight or ten feet wide for the whole strip. Cut back the plants annually to produce a thick bottom, according to the mode usually adopted for hedges, namely, about three inches high the first year, six inches above this the second year, and so on with a little increase in height for each successive year, until the hedge is formed. A mature hedge should never be cut square across the top, as this shades the portion below, and makes it thin; but it should be cut to a peak, like the steep roof of a house. See figures, illustrating this point, on page 269, Vol. II of Rural Affairs.]

Preserving Onions.—Can you tell me the best manner of preserving onions through the winter, for I never succeed? They sprout, grow and rot; and yet I see "ropes" of onions in markets as late as March, without any sign of vitality. Are they roped or plaited together while the "tops" are green? When withered they don't retain the onion if plaited in that state. F. R. *Otsego Co.* [Onions should be pulled as soon as the tops die and fall, and spread evenly over the ground to dry and cure. After three or four days' drying they should be turned over, being careful not to bruise them. When thoroughly dried those intended for roping or stringing should have their tops cut off two inches from the bulb. "These strings are made by taking a few straws, (rye straw is best,) and with a piece of wrapping twine commence at the but end of the straw to wind, and at every two or three turns add an onion, ending at the top. This secures it firmly, and brings its broad, flat base upon the outside of the string. The largest should be tied upon the bot tom of the string, gradually diminishing in size, until the smallest are tied upon the top. This gives the string a conical form, and a neat and tidy appearance when arranged for sale." These strings, if hung on beams in a dry cellar or warm garret, will keep good till spring.]

Yellows.—Will the Editors of the COUNTRY GENTLEMAN please tell me whether or not the disease known as the Yellows will affect the apple as well as the peach tree, and if so, will it be alike contagious in the apple as in the peach? AN OLD SUBSCRIBER. *Bethlehem, Albany Co.* [The Yellows never affects the apple at all, but is wholly confined to the peach and nectarine.]

Books on the Honey Bee.—J. I., *Oswego*, wishes to know through THE CULTIVATOR, what book to get on practical Bee-Keeping? Either Langstroth's or Quinby's would answer his purpose, and we can hardly tell which of the two would suit him best. We can send either by mail, postpaid, for $1.50.

Books.—In answer to the inquiries of *L. O.*, there is no book on Raspberry Culture alone; Pardee's Treatise on the Strawberry we can send post-paid for 90 cents, and Fuller's Grape Culturist for $1.25—which we can recommend as most likely to suit his wants.

Churn Power.—I propose answering the inquiry of your correspondent as to a new churn power, which I have lately invented, which I think will compare favorably with any machine for that purpose yet brought before the public. It consists of a system of cog-wheels turned by a crank, driving a fly-wheel of twenty-six inches diameter—said fly-wheel has an upright rod attached to it, which works a slide to which the churn dasher is fastened. It is suited for any upright dash churn. The whole machine is mounted upon castors for convenience of moving about. It occupies four feet and four inches of space—five feet and six inches in height—weighs about seventy lbs.—turns easily by hand, and will make 200 strokes of the dash per minute. By the addition of a band-wheel, instead of the crank, it can be run by water, steam, horse or dog power. The said machine is now in operation on the premises of your correspondent N. P. Atkinson of Elm Grove, West Va. I have applied for a patent. Price of the above machine $18.

Elm Grove, West Va., July, 1864. V. BROWN.

WOOL-GROWERS' STATE CONVENTION.

[The following was received at too late an hour to appear in our last number.]

The wool-growers of the State of New-York, and other persons interested, are requested to meet at the City Hall, (Court House,) in the city of Rochester, on Wednesday, the 21st day of September next, at 10 o'clock A. M., for the purpose of organizing a State Wool-Growers' Association, and adopting such other measures as may be deemed expedient.

A. B. ALLEN,	New-York.
HORACE ALLEN,	Venice Center.
LEWIS F. ALLEN,	Black Rock.
RICHARD H. ALLEN,	New-York.
ALEXANDER ARNOLD,	Avoca.
E. AULLS,	Wheeler.
ALLEN H. AVERY,	Manlius.
T. C. BAILY,	Albion.
LUTHER BAKER,	Lafayette.
WILLIAM BEEBE,	Eaton's Neck.
S. M. BARKER,	North Hector.
L. B. BLOOD,	Italy Hill.
E. E. BROWN,	New Hope.
H. T. BROOKS,	Pearl Creek.
CHESTER BAKER,	Lafayette.
L. BRADNER,	South Dansville.
A. B. CONGER,	Waldberg.
ELON COMSTOCK,	New-York.
CHARLES COOK,	Havana.
EDMUND O. CLAPP,	Manlius.
E. G. COOK,	Ellisburgh.
WM. CHAMBERLAIN,	Red Hook.
EZRA CORNELL,	Ithaca.
A. H. CLAPP,	Manlius.
WILLIAM COCKBURN,	Kingston.
S. W. COLE,	Friendship.
SAMUEL CHEEVER,	Saratoga.
N. M. DART,	N. Harpersfield.
JAMES M. ELLIS,	Syracuse.
ELIJAH ENNIS,	Palmyra.
THEODORE S. FAXTON,	Utica.
GEORGE GEDDES,	Fairmount.
JAMES GEDDES,	Fairmount.
WM. H. GLEASON,	Sag Harbor.
OSCAR GRANGER,	Saratoga Springs.
NORMAN GOWDY,	Lowville.
BENJ. N. HUNTINGTON,	Rome.
WM. M. HOLMES,	Greenwich.
I. HEALY,	South Dansville.
CHARLES H. HULL,	New Lebanon.
C. HATCH,	Monticello.
JAMES S. HAWLEY,	Hawleyton.
BENJ. P. JOHNSON,	Albany.
ORANGE JUDD,	New-York.
JOHN JOHNSTON,	Geneva.
WILLIAM KELLY,	Rhinebeck.
JOHN A. KING,	Jamaica.
L. B. LANGWORTHY,	Rochester.
ROBERT M. LYON,	Bath.
A. LARROWE,	Wheeler.
L. G. MORRIS,	Fordham.
CHESTER MOSES,	Marcellus.
OTTO F. MARSHALL,	Wheeler.
D. D. T. MOORE,	Rochester.
D. MORRISON,	Montgomery
FRANKLIN J. MARSHALL,	Wheeler.
EZRA P. PRENTICE,	Albany.
T. C. PETERS,	Darien.
E. B. POTTLE,	Naples.
A. G. PERCY,	Newark.
GEORGE W. PINE,	Herkimer.
D. W. PERCY,	North Hoosick.
SOLON ROBINSON,	New-York.
HENRY S. RANDALL,	Cortland Village.
WILLIAM T. REMER,	Penn Yan.
JAMES O. SHELDON,	Geneva.
IRA SPENCER,	De Ruyter.
M. M. SMITH,	Lowville.
JOHN M. SHERWOOD,	Auburn.
LIONEL SHERWOOD,	Newark.
N. SQUIER,	Italy Hill.
F. L. C. SAILLY,	Plattsburgh.
A. TODD, JR.,	Ontario.
A. S. UPHAM,	LeRoy.
HENRY TEN EYCK,	Cazenovia.
CHARLES TALLMAN,	Syracuse.
A. F. WILCOX,	Fayetteville.
WINSLOW C. WATSON,	Keeseville.
J. WHITE,	Italy Hill.
ISAAC J. WHITNEY,	Clarkson.
LORENZO WEBBER,	Orange.

Advantages of Thorough Cultivation.

In our notes on the farming of JOHN JOHNSTON, page 272, we adverted to the importance attached by him to the *thorough working of the land*. Perhaps there is no one respect in which our farmers, especially on heavy soil, are more deficient than in this. Our readers are to some extent familiar with the often quoted practice of Mr. Smith, of Lois Weedon, Northamptonshire, England, who has shown what may be accomplished by simple tillage of the land, and who only applies for farm crops the same principles which the kitchen gardener acts on for the production of vegetables.

Spade culture, trenching, hoeing by hand, &c., however excellent the result they may be made to yield on a small scale, become totally impracticable for the general farmer. The only thing within his power is to approach these results as nearly as he can, by the use of the plow, cultivator, harrow and roller. And the truth is that these are quite sufficient, if judiciously employed, to meet the present requirements of the case, except it may be under peculiar conditions of cheap labor and high prices of produce, which do not exist in this country, and to a very small extent in any other. The free use of the implements of culture not only promotes the operations of Nature, in disintegrating and rendering more accessible to the plant, the food which its roots are seeking from the soil, but the manure added by the farmer is of much greater benefit in proportion as the land is in higher tilth. And the resources of nutriment contained in the atmosphere are doubly available from the fact that they are more readily absorbed by the soil, and that the mere exposure of its particles to the air contributes so much to what mechanical agencies have already effected toward their disintegration.

The English farmer decides upon his rotation, not only with a view to the alternation of "green crops" with "white" ones—of roots and clovers, with grains—for the reason that the two draw to some extent upon different constituents of the soil,—but also because, in the different processes of culture employed, the land is brought to a condition of cleanliness and tilth otherwise unattainable. Here, as turnips and mangolds have never become popularized, the putting down of land to grass, forms almost its only respite from the cereals; but when it is in Indian corn we have as great an opportunity of thorough cultivation as if a crop of roots was taken, and thus, although one of the cereals, it has this advantage over the others, and so forms a proper rotation with them, under good culture. It is therefore a point to be particularly noted, not only as Mr. JOHNSTON'S experience proves, that Indian corn will itself well repay the continued stirring of the soil after it is up, and the thorough working of the land before, but also that these processes must exert a favorable influence upon the crops that are to succeed.

In an article on page 393 of our last volume, we gave some facts stated by Dr. Voelcker in a lecture on the atmospheric nutrition of plants, before the Royal Agricultural Society, as to the importance of aerating and pulverizing heavy soils, in this point of view. But one of the difficulties met in their cultivation, is that of performing it exactly at the right time. If clayey land is plowed when too wet, it is next to impossible to reduce it to good order by after-treatment; and if too dry, it is an exceedingly laborious task to do anything with it at all. The necessity of constant watchfulness on the part of the farmer, is never greater than in the exercise of due judgment as to the time, as well as of sufficient diligence in the amount, of the culture he gives his land.

Let us then briefly re-state some of the advantages of thorough cultivation. It involves:

1. The mechanical pulverization of the soil, giving a better seed-bed, and making the particles more accessible to the action of the roots.

2. Better drainage, and at the same time, better ability to withstand drouth, the soil being moist and mellow, where it would otherwise be baked and hard.

3. The co-operation of the atmosphere in farther decomposing the comminuted particles of soil, and setting free the mineral elements of the growing plant.

4. The absorption from the atmosphere of a greater portion of its ammonia and carbonic acid for the direct nourishment of vegetable life.

5. The increased effect of manures, from their more complete intermixture and consequent more perfect action.

6. The cleansing of the land from weeds, which not only abstract the nourishment due to the growing crop, but also generate successors, continually multiplying themselves from year to year.

7. The better condition of the field for machine work; it dulls the knives of a reaper or mower, and leads to frequent breakages, to cut through the clods on a roughly seeded field.

It should not be forgotten how efficient an agent in the pulverization of a heavy soil, is the alternate freezing and thawing of winter. By autumn plowing to effect this, more can be accomplished than by much labor otherwise applied. Underdraining also contributes greatly to the same end. And while much that has been said above applies especially to heavy lands, it must not be forgotten that it has a wider bearing: "Sandy loams," says Robert Russell, "are benefited more than any other class of soils by tillage, which increases their absorbing powers. These qualities fit them especially for turnip husbandry. So also in America, the sandy loams are well suited for maize and its culture in summer. Deep cultivation, more especially in dry climates, is a most important means of increasing the retentive and absorbent qualities of light soils. The benefits of cultivation are apparent from the fact that grasses on sandy loams are liable to be scorched by the drouths of summer to a greater degree than the turnips in a well drilled field."

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[The above, which we copy from *The Gardener's Monthly*, for August, comes from a gentleman highly qualified to judge, and whose good opinion it is therefore a matter of much pleasure for us to have earned.]

CLOVER—SHADING THE GROUND.

EDITORS CO. GENT.—In your issue of the 21st of July, there is an article dated at Munster, Prussia, on the question—"How often can Clover be Raised on the same Land?" The writer starts with the asumption that—

"A large part of the beneficial effects of a clover crop is due to the clover shading the ground so densely. * * * Put a board down flat anywhere in your field for some months in the summer. You can tell the spot next year in your crop. The mulching by the board is equal to manuring. The same if you place a pile of straw on a field and remove it clean after some months, though no leaching has taken place, the mulched spot is highly benefited. Thus all shading crops are beneficial. For instance, I have harvested a poor crop of wheat; the wheat was thin, owing to unfavorable weather, though on rich ground. You may be sure the next crop will then be much poorer than it would have been after a good crop of wheat. Chemistry would declare this a mistake, for a good crop would have exhausted the land of more phosphoric acid, alkali, etc.; but experience is stubborn, and the fact is, *a good crop always leaves a better chance for the next crop, than a poor one.* The main reason for this—though not the only one—is, that a good crop shades the ground better."

I see you notice, editorially, that part of the article which speaks directly in reference to the length of time in which clover may be grown on the same soil, but make no allusion to the points comprised in the above quotation, which I think are of paramount importance. If it is a fact, as above asserted, that a light crop leaves the ground in worse condition for the next crop than a heavy one, American as well as German farmers ought to know it. The writer admits that "Chemistry would declare this a mistake," and I think common sense and practical observation agree with chemistry on this point.

In regard to the alleged result, the writer says, "the main reason—though not the only one—is, that a good crop shades the ground better." It is evident that he not only believes this to be the "*main reason*," but the only one of any consequence, for though he intimates that there are other reasons, he does not mention them. Passing over for the present, his arguments in regard to the benefit of shade, let us look a little at his assumption that a light or poor crop leaves the ground in worse condition than a heavy one. According to this, the lighter the first crop, the poorer the chance for the next; and the heavier the first crop, the better for the next. Let us follow this to its legitimate end: Suppose we have no crop at all—nothing to shade the ground—it remains a naked fallow? Is it in a worse condition for a crop than if it had produced a heavy one? If so, what becomes of the advantages of summer-fallowing, which for certain soils are known to be great? Ask any farmer who has had experience in summer-fallowing a clayey soil, which he would prefer, a clean fallow or a "shading" crop, as a preparation for wheat. I do not here take into consideration the actual *profit* of the summer fallow as compared with any crop that might be grown in its stead, because the point is not involved in the issue; the simple question is, which is best for the next crop—wheat?

That benefit may result from mulching the ground, or even covering it with a "board," is admitted; but your correspondent in Prussia makes no distinction between the effects of the "shade" produced by the application of dead matter in the form of mulch, and that of growing crops! Various reasons may be assigned why soil is improved by mulching, without attributing the effects merely to shade. Clay soils become more friable. This may be owing in part to the moisture being so well retained that angle-worms are almost constantly at work in it, boring it through and through in every direction. The loosening effect which these amimals produce on tenacious soils, when moist, but not too wet, has often been noticed. If sward is mulched, the grass dies and the vegetable matter decomposes, thus being brought into a state in which it affords immediate support to the crop growing on the land. It may be that where the soil is mulched, certain soluble elements of plant-food are drawn near the surface in combination with moisture, are there arrested and retained in the soil, and fed upon by crops. Nitre is sometimes found in soil which has been protected from rains and the direct action of the atmosphere.

But I see no reason why any of these effects should take place in connection with growing plants. It is true that a dense crop of clover may make a tenacious soil more friable; this, however, does not result from the *shade*, but from the intimate division of the soil by the roots, which operate like so many wedges. There are other crops which shade the ground as deeply and for as long a time as clover, but their effect in regard to fertility, is not considered so favorable—such as Indian corn, (where it grows luxuriantly,) Swedish turnips, cabbages, &c. If shade is the "main" thing, these crops should fertilize the soil as much as clover.

A growing crop, unlike a dead mulch, increases the abstraction of moisture from the soil, and there does not appear to be any means of retaining the substances which it draws from the soil and subsoil, except by returning the crop to the soil. A portion, to be sure, may be returned by the decay of the roots. But close observing farmers will require better arguments than have yet been presented, to convince them that the effects of the shade of living plants can properly be compared with those of ordinary mulching. H.

IMPORTANT TO FLAX GROWERS.

The undersigned offers for sale a machine for breaking and dressing flax. The working parts are all iron, put in a substantial wood frame, and can be moved about as easily as a thrashing machine. It can be run by a two horse tread power, thus enabling farmers to dress their own flax. It will break from 800 to 1,000 pounds flax straw per day. The machine cost $125, and will be sold for $95 if applied for soon, as the subscriber has no farther use for it.

For farther particulars call on or address the subscriber.

CALVIN JACKSON,
Sept. 1- mlt. Brunswick Center, Rensselaer Co., N. Y.

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Aug. 4—weow4tmlt.

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J. C. TAYLOR,
July 21—w&mtf. Holmdel, N. J.

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